

**READ AND SAVE THESE INSTRUCTIONS**

PN 463687



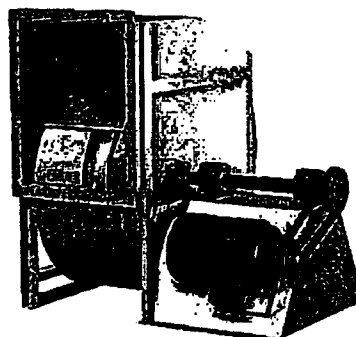
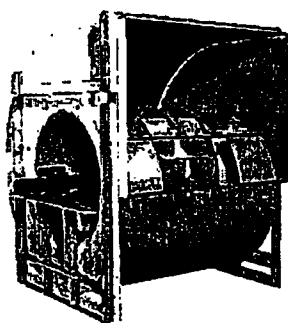
**GREENHECK**

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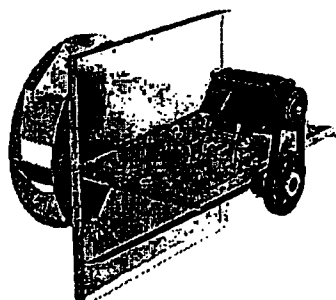
**BELT DRIVE**

- CENTRIFUGAL (BISW, AFSW, BIDW, AFDW)
- INDUSTRIAL PROCESS (IPA, IPO, IPW)
- PLENUM (QEP)
- PLUG (PLG)

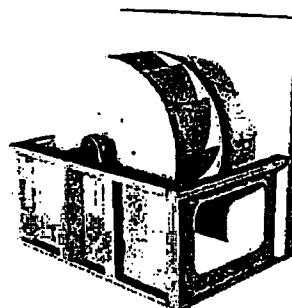
**Installation Operating and Maintenance Manual**



**CENTRIFUGAL AND INDUSTRIAL**



**PLUG**



**PLENUM**

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**Report any damaged equipment to the shipper immediately!**

All Centrifugal, Industrial Process, Plenum and Plug Fans are shipped on a skid or packaged to minimize damage during shipment. The transporting carrier has the responsibility for delivering all items in their original condition as received from Greenheck. The individual receiving the equipment is responsible for inspecting the unit for obvious or hidden damage, recording any damage on the bill of lading before acceptance and filing a claim (if required) with the final carrier.

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**CL 580**

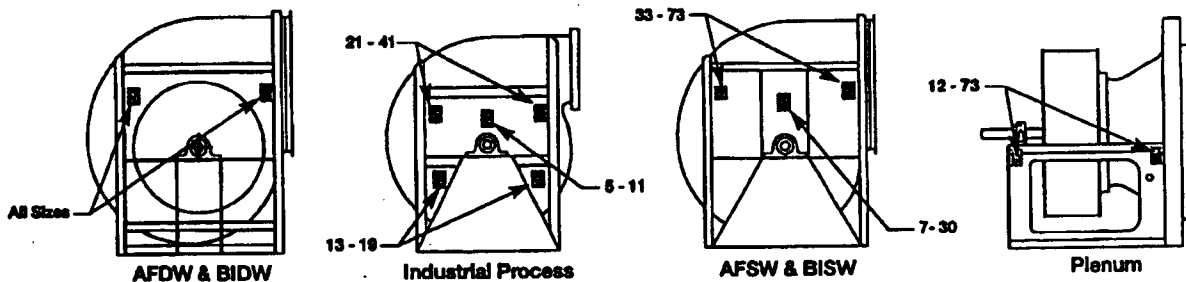
## GENERAL INFORMATION

To insure a successful installation, the instructions in this manual should be read and adhered to. Failure to comply with proper installation procedures may void the warranty.

### HANDLING

Fans are to be rigged and moved by the lifting brackets provided or by the skid when a forklift is used. See figures below for proper lifting locations. Location of brackets varies by model and size. QEP plenum fans utilize holes located in the framework of the fan. Handle in such a manner as to keep from scratching or chipping the coating. Damaged finish may reduce ability of fan to resist corrosion.

**FANS SHOULD NEVER BE LIFTED BY THE SHAFT, HOUSING, MOTOR, BELT GUARD OR ACCESSORIES.**



### STORAGE


When a fan is not going to be in service for an extended amount of time, certain procedures should be followed to keep the fan in proper operating condition.

- Rotate fan wheel monthly and purge bearings once every three months
- Cover unit with tarp to protect from dirt and moisture (Note: do not use a black tarp as this will promote condensation)
- Energize fan motor once every three months
- Store belts flat to keep them from warping and stretching
- Store unit in location which does not have vibration
- After storage period, purge grease before putting fan into service

If storage of fan is in a humid, dusty or corrosive atmosphere, rotate the fan and purge the bearings once a month. Improper storage which results in damage to the fan will void the warranty.

### UNIT IDENTIFICATION

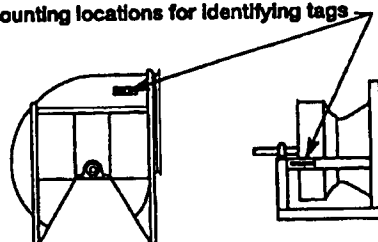
The tag below is an example of an identification label on the fan. The information provides general details about the fan, as well as containing specific information unique to the unit. When contacting your Greenheck representative with future needs or questions, please have the information on this label available.

	
MODEL	_____
S/N	_____
MARK	_____

- Model - General description of fan
- S/N - Serial Number assigned by Greenheck, which is a unique identifier for every unit
- Mark - Customer supplied identification

Tags are mounted in an area which is clearly visible, usually near the fan outlet on the drive side of the fan. The exact tag location may differ due fan model and size.

Typical mounting locations for identifying tags -



**CAUTION!**

When installing a fan, ensure the proper protective devices are used to protect personnel from moving parts and other hazards. A complete line of protective accessories are available from Greenheck including: Inlet guards, outlet guards, belt guards, shaft guards, protective cages and electrical disconnects.

Check local codes to ensure compliance for all protective devices.

For further details on safety practices involving industrial and commercial fans please refer to AMCA Publication 410.

**ELECTRICAL DISCONNECTS**

All fan motors should have disconnects located in close visual proximity to turn off electrical service. Service disconnects shall be locked out when maintenance is being performed.

**MOVING PARTS**

All moving parts must have guards to protect personnel. Refer to local codes for requirements as to the number, type and design. Fully secure fan wheel before performing any maintenance. The fan wheel may start "free wheeling" even if all electrical power has been disconnected. Before the initial start-up or any restart, check the following items to make sure that they are installed and secure.

**GUARDS (BELT, SHAFT, INLET, OUTLET)**

Do not operate fans without proper protective devices in place. Failure to do so may result in serious bodily injury and property damage.

**ACCESS DOORS**

Before opening access doors ensure the fan wheel has stopped moving and that the wheel has been secured from being able to rotate. Do not operate fan without access door in its fully closed position.

**AIR PRESSURE AND SUCTION**

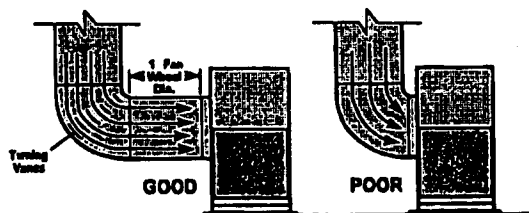
In addition to the usual hazards associated with rotating machinery, fans also create a dangerous suction at the inlet. Special caution needs to be used when moving around a fan whether it is in operation or not. Before start-up, make sure the inlet area is clear of personnel and loose objects.

**INSTALLATION**

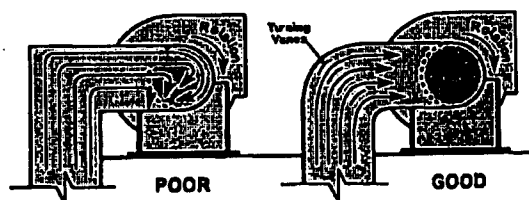
Installations with inlet or discharge configurations that deviate from this standard may result in reduced fan performance. Restricted or unstable flow at the fan inlet can cause pre-rotation of incoming air or uneven loading of the fan wheel yielding large system losses and increased sound levels. Free discharge or turbulent flow in the discharge ductwork will also result in system effect losses. Refer to the following diagrams for the most efficient installation conditions.

**CENTRIFUGAL AND INDUSTRIAL PROCESS FANS - INSTALLATIONS****DUCTED INLET INSTALLATIONS****Inlet Duct Turns**

Installation of a duct turn or elbow too close to the fan inlet reduces fan performance because air is loaded unevenly into the fan wheel. To achieve full fan performance, there should be at least one fan wheel diameter between the turn or elbow and the fan inlet.

**Inlet Spin**

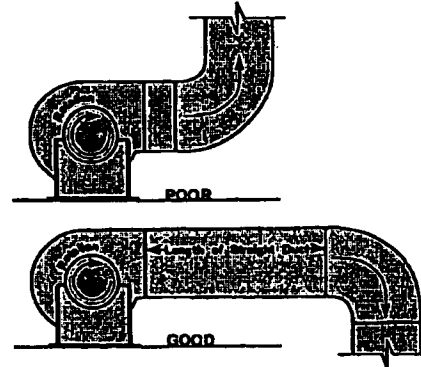
Inlet spin is a frequent cause of reduced fan performance. The change in fan performance is a function of the intensity of spin and not easily defined. The best solution is proper duct design and airflow patterns.



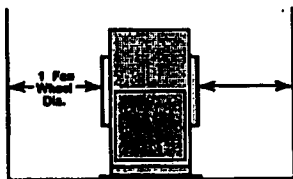
**DUCTED OUTLET INSTALLATIONS****Discharge Duct Turns**

Duct turns located near the fan discharge should always be in the direction of the fan rotation.

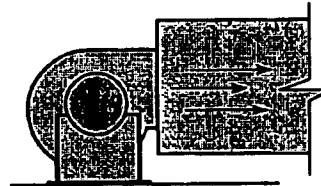
Fan performance is reduced when duct turns are made immediately off the fan discharge. To achieve cataloged fan performance there should be at least three equivalent duct diameters of straight ductwork between the fan discharge and any duct turns.

**NON-DUCTED INSTALLATIONS****Non-Ducted Inlet Clearance**

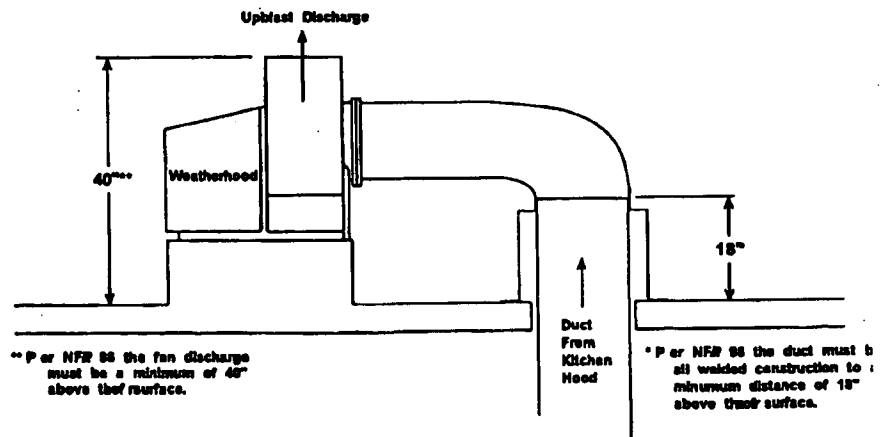
Installation of a fan with an open inlet too close to a wall or bulkhead will cause reduced fan performance. It is desirable to have one fan wheel diameter and a minimum of three-fourths of a wheel diameter between the fan inlet and the wall.

**Free Discharge**

Free or abrupt discharge into a plenum results in a reduction in fan performance. The effect of static regain in discharge is not realized.

**CENTRIFUGAL - Outdoor Installation for UL 762 Listed Fans for Restaurant Exhaust**

The UL 762 listing for restaurant exhaust is available on BISW fan sizes 7-73, Arr. 1 and 9 with belt guard and Arr. 10 with weatherhood. UL 762 fans are listed for a maximum operating temperature of 375°F and include a bolted access door and 1" drain connection. An outlet guard is strongly recommended when the fan discharge is accessible. An upblast discharge is recommended. The fan discharge must be a minimum of 40" above the roof line and the exhaust duct must be fully welded to a distance of 18" above the roof surface.



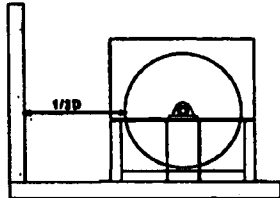
This drawing is for dimensional information only. See the latest edition of NFPA 96 Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations for detailed installation instructions, materials, duct connections and clearances.

## PLENUM AND PLUG FANS - INSTALLATIONS

### UNHOUSED WHEELS

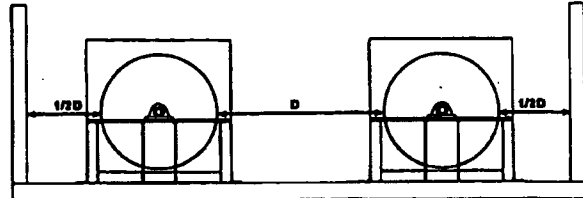
#### Adjacent Walls

The distance between the fan and walls or ceilings will effect the performance of the fan. The recommended distance between the fan wheel and any wall is a minimum of one - half wheel diameter. Multiple walls reduce the performance even more.



#### Side by Side

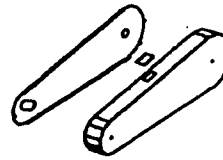
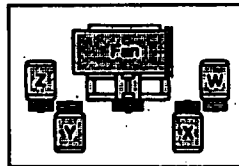
When two or more plenum fans are in parallel, there should be at least one fan diameter spacing between the wheels. Applications with less spacing will experience performance losses.



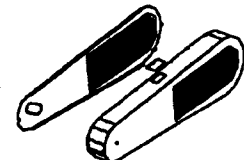
### BELT GUARDS

Greenheck offers four types of customized belt guards dependent upon fan model, arrangement and motor position. The four types of belt guards are shown in illustrations to the right.

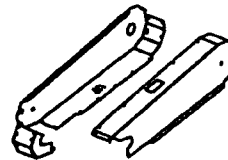
If the guard is not purchased from Greenheck, they must be supplied by the installer or owner.



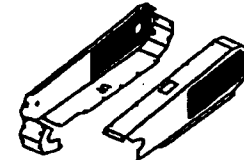
QEP & SW - Arr. 1, 3  
(Mtr Pos. W / Z)  
SW - Arr. 9, 10  
PLG



DW - Arr. 3 (Mtr Pos. W / Z)

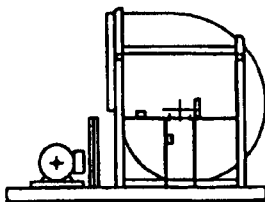


QEP & SW - Arr. 1, 3 (Mtr  
Pos. X / Y)

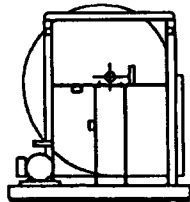


DW - Arr. 3 (Mtr Pos. X / Y)

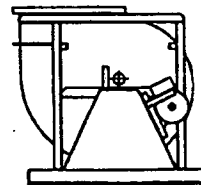
If the belt guard is not factory mounted or was not supplied by Greenheck, then it must be field mounted. **Brackets and mounting hardware are the responsibility of the installer.** The figures below illustrate suggested attachment points for belt guard mounting bracket locations. These locations vary with motor mounting position, arrangement, and fan type. The bearing supports and fan structure are used in most instances and when the motor is not mounted to the fan itself, a bracket should also be located near it. This information is intended as only a guide and actual field conditions may dictate another mounting location for the guard brackets. Refer to local codes for securing guarding.



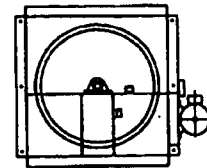
Mtr. Position: W/Z  
Arr. - 1,3



Mtr. Position: X/Y  
Arr. - 1,3



Mtr. Position: L/R  
Arr. - 9



Mtr. Position: Side

Suggested Attachment Points

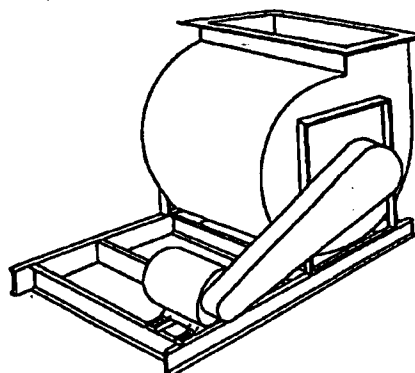
## BASES

### (FOUNDATION AND ISOLATION)

Critical to every fan installation is a strong, level foundation. A reinforced poured concrete pad with a structural steel base or inertia base provides an excellent foundation. Structural bases must be sturdy enough, with welded construction, to prevent flexing and vibration.

To eliminate vibration and noise from being transferred to the building, vibration isolators should be used. The fan is mounted directly on the isolation base and must be supported the entire length of the fan base angle (Refer to the installation manual for structural bases if the base was supplied by Greenheck). The isolators are installed between the isolation base and the foundation.

After the fan, isolation base, and isolators are installed, the entire assembly must be leveled. Position the level on the isolation base, not the fan shaft, for proper leveling. Additionally, the motor and fan shafts must be level and parallel relative to each other for proper alignment.



Typical Fan on Isolation Base

## ROTATABLE HOUSINGS

It may be necessary to rotate the scroll of the fan to achieve a different discharge position than what was originally supplied. Centrifugal fans models BISW, AFSW, BIDW, and AFDW (sizes 7 - 30, arr. 1, 9, and 10, class I and II) and Industrial Process fans (sizes 5 - 19, standard and heavy duty) have the flexibility to be rotated in the field. This is accomplished by removing the housing bolts, rotating the housing to a new discharge position, and reinstalling the bolts.

## RADIAL GAP, OVERLAP & WHEEL ALIGNMENT

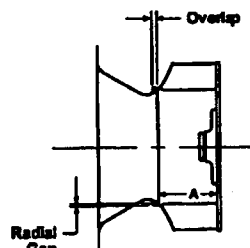
Efficient fan performance can be maintained by having the correct radial gap, overlap and wheel alignment. These items should be checked after the fan has been in operation for 24 hours and before start-up when the unit has been disassembled. Radial gap and overlap information applies to models: BISW, AFSW, BIDW, AFDW, QEP, and PLG.

Inlet Cone to  
Backplate Distance  
not QEP (inches)

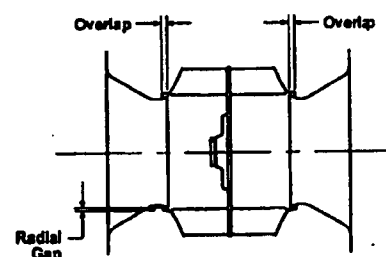
Unit Size	A dim. ± Tolerance
7 - 10	3 5/8 ± 1/8
12	4 ± 1/8
13	4 7/16 ± 1/8
15	5 ± 1/8
16	5 7/16 ± 1/8
18	6 3/8 ± 1/8
20	7 ± 3/16
22	7 13/16 ± 3/16
24	8 5/8 ± 1/4
27	9 7/16 ± 1/4
30	10 9/16 ± 3/8
33	11 7/16 ± 3/8
36	12 3/4 ± 3/8
40	14 3/16 ± 3/8
44	15 9/16 ± 3/8
49	17 1/8 ± 1/2
54	18 13/16 ± 1/2
60	20 15/16 ± 1/2
66	22 7/8 ± 1/2
73	25 1/2 ± 1/2

QEP Inlet Cone to  
Backplate Distance  
(inches)

Unit Size	A dim. ± Tolerance
12	3 1/2 ± 1/8
15	5 3/8 ± 1/8
16	5 7/8 ± 1/8
18	6 1/2 ± 1/8
20	7 ± 1/8
22	7 7/8 ± 1/8
24	8 5/8 ± 1/8
27	9 1/2 ± 1/8
30	10 5/8 ± 1/8
33	11 3/4 ± 1/8
36	13 ± 1/8
40	14 1/4 ± 1/8
44	15 3/4 ± 1/8
49	17 3/8 ± 1/8
54	19 1/4 ± 1/8
60	21 1/4 ± 1/8
66	23 3/8 ± 1/8
73	25 7/8 ± 1/8



BISW, AFSW, QEP, PLG



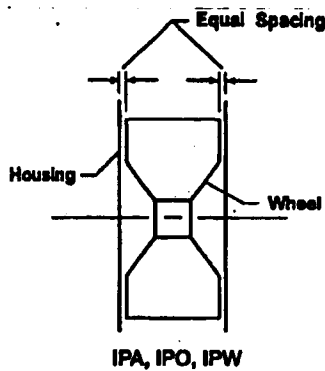
BIDW, AFDW

### RADIAL GAP

Radial gap is adjusted by loosening the inlet cone/ring bolts and centering the cone/ring on the wheel. If additional adjustment is required to maintain a constant radial gap, loosening the bearing bolts and centering wheel is acceptable as a secondary option.

### OVERLAP

Overlap is adjusted by loosening the wheel hub from the shaft and moving the wheel to the desired position along the shaft. The Inlet Cone to Backplate Distance chart lists the distance between the wheel and the inlet cone spacing for non-double width fans. Overlap on double width fans is set by having equal spacing on each side of the wheel.

**WHEEL ALIGNMENT**

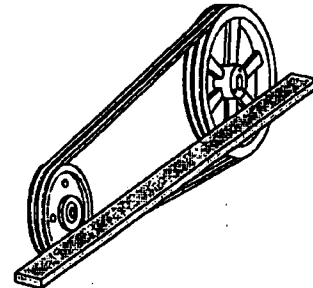
Correct wheel alignment for industrial process fans, models IPA, IPO, and IPW is achieved by centering the wheel in the housing.

**V BELT DRIVES**

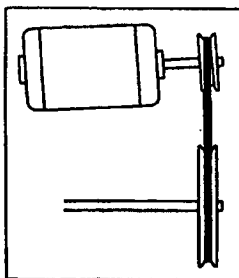
The V-belt drive components, when supplied by Greenheck Fan Corporation, have been carefully selected for this unit's specific operating condition. Caution: changing V-belt drive components could result in unsafe operating conditions which may cause personal injury or failure of the following components: 1. Fan Shaft, 2. Fan Wheel, 3. Bearings, 4. V-belt, 5. Motor.

**V BELT DRIVE INSTALLATION**

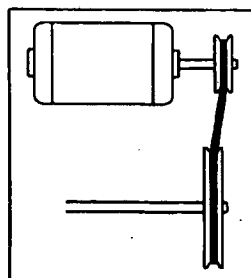
1. Remove the protective coating from the end of the fan shaft and assure that it is free of nicks and burrs.
2. Check fan and motor shafts for parallel and angular alignment.
3. Slide sheaves on shafts - do not drive sheaves on as this may result in bearing damage.
4. Align fan and motor sheaves with a straight-edge or string and tighten.
5. Place belts over sheaves. Do not pry or force belts, as this could result in damage to the cords in the belts.
6. Adjust the tension until the belts appear snug. Run the unit for a few minutes (see section on unit start-up) and allow the belts to "Set" properly.
7. With the fan off, adjust the belt tension by moving the motor base. (See belt tensioning procedures in the maintenance section of this manual). When in operation, the tight side of the belts should be in a straight line from sheave to sheave with a slight bow on the slack side.



Aligning Sheaves with a Straight Edge



Improper Sheave Alignment



Proper Sheave Alignment



## UNIT START UP

1. Disconnect and lock-out all power switches to fan. See warning below.
2. Check all fasteners, set screws and locking collars on the fan, bearings, drive, motor base and accessories for tightness.
3. Rotate the fan wheel by hand and assure no parts are rubbing.
4. Check for bearing alignment and lubrication.
5. Check the V-belt drive for proper alignment and tension.
6. Check the all guarding (if supplied) for being securely attached and not interfering with rotating parts.
7. Check operation of variable inlet vanes or discharge dampers (if supplied) for freedom of movement.
8. Check all electrical connections for proper attachment.
9. Check housing and ductwork, if accessible, for obstructions and foreign material that may damage the fan wheel.

### WARNING

Disconnect and secure to the "Off" position all electrical power to the fan prior to inspection or servicing. Failure to comply with this safety precaution could result in serious injury or death.

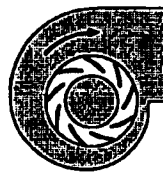
## ADDITIONAL STEPS FOR INITIAL START-UP

1. Check for proper wheel rotation by momentarily energizing the fan. Rotation is always determined by viewing the wheel from the drive side and should correspond to the rotation decal affixed to the unit. One of the most frequently encountered problems with Centrifugal Fans is motors which are wired to run in the wrong direction. This is especially true with 3-phase installations where the motor will run in either direction, depending on how it has been wired. To reverse rotation of a 3-phase motor, interchange any two of the three electrical leads. Single phase motors can be reversed by changing internal connections as described on the motor label or wiring diagram.

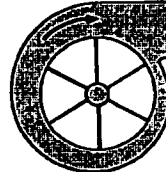
### CW ROTATION



Centrifugal  
Backward Inclined



Centrifugal  
Airfoil



Industrial Process  
Radial Blade

*Always viewed from the drive side.*

2. If the fan has inlet vanes, they should be partially closed to reduce power requirements. This is especially important if the fan is designed for a high temperature application and is being started at room temperature.
3. Fans with multi-speed motors should be checked on low speed during initial start-up.
4. Check for unusual noise, vibration or overheating of bearings. Refer to the "Troubleshooting" section of this manual if a problem develops.
5. Grease may be forced out of the bearing seals during initial start-up. This is a normal self-purging feature of this type of bearing.



## VIBRATION

Excessive vibration is the most frequent problem experienced during initial start-up. Left unchecked, excessive vibration can cause a multitude of problems, including structural and/or component failure. The most common sources of vibration are listed below.

1. Wheel Unbalance
2. Drive Pulley Misalignment
3. Incorrect Belt Tension
4. Bearing Misalignment
5. Mechanical Looseness
6. Faulty Belts
7. Drive Component Unbalance
8. Poor Inlet/Outlet Conditions
9. Foundation Stiffness

Many of these conditions can be discovered by careful observation. Refer to the trouble-shooting section of this manual for corrective actions. If observation cannot locate the source of vibration, a qualified technician using vibration analysis equipment should be consulted. If the problem is wheel unbalance, in-place balancing can be done providing there is access to the fan wheel. Any correction weights added to the wheel should be welded to either the wheel back (single plane balance) or to the wheel back and wheel cone (two-plane balance).

Greenheck performs a vibration test on all centrifugal fans before shipping. Three vibration readings are taken on each bearing in the horizontal, vertical, and axial directions. The allowable maximum vibration is 0.15 in/sec. peak velocity filter-in at the fan rpm per AMCA standard 204. These vibration signatures are a permanent record of how the fan left the factory and are available upon request.

Generally, fan vibration and noise is transmitted to other parts of the building by the ductwork. To eliminate this undesirable effect, the use of heavy canvas connectors is recommended. If fireproof material is required, Flexweave 1000 - type FN-30 can be used.

## ROUTINE MAINTENANCE

Once the unit has been put into operation, a routine maintenance schedule should be set up to accomplish the following:

1. Lubrication of bearings and motor.
2. Variable inlet vanes should be checked for freedom of operation and wear.
3. Wheel, housing, bolts and set screws on the entire fan should be checked for tightness.
4. Any dirt accumulation on the wheel or in the housing should be removed to prevent unbalance and possible damage.
5. Isolation bases should be checked for freedom of movement and the bolts for tightness. Springs should be checked for breaks and fatigue. Rubber isolators should be checked for deterioration.
6. Inspect fan impeller and housing looking for fatigue, corrosion, or wear.

When performing any service to the fan, disconnect the electrical supply and secure fan impeller.

### CAUTION:

When operating conditions of the fan are to be changed (speed, pressure, temperature, etc.) consult Greenheck to determine if the unit can operate safely at the new conditions.

## MOTORS

Motor maintenance is generally limited to cleaning and lubrication. Cleaning should be limited to exterior surfaces only. Removing dust and grease buildup on the motor housing assists proper motor cooling. Never wash-down motor with high pressure spray. Greasing of motors is only intended when fittings are provided. Many fractional motors are permanently lubricated for life and require no further lubrication. Motors supplied with grease fittings should be greased in accordance with the manufacturer's recommendations. When motor temperature does not exceed 104°F (40°C), the grease should be replaced after 2000 hours of running time.

## BEARINGS

The bearings for Greenheck fans are carefully selected to match the maximum load and operating conditions of the specific class, arrangement, and fan size. The instructions provided in this manual and those provided by the bearing manufacturer, will minimize any bearing problems. Bearings are the most critical moving part of the fan, therefore special care is required when mounting them on the unit and maintaining them.

Refer to the following chart and the manufacturers instructions for grease types and intervals for various operating conditions. Never mix greases made with different bases. This will cause a breakdown of the grease and possible failure of the bearing.

Recommended Bearing Lubrication Schedule for Greenheck Fans									
Relubrication Schedule in Months*									
Fan RPM	Bearing Bore (Inches)								
	1/2 - 1	1 1/8 - 1 1/2	1 5/8 - 1 7/8	1 15/16 - 2 1/16	2 1/16 - 3	3 1/2 - 3 5/8	3 15/16 - 4 1/2	4 15/16 - 5 1/2	
To 250	6	6	6	6	6	6	4	3	
500	6	6	6	6	4	3	3	2	
750	6	5	4	3	3	2	2	1	
1000	6	4	3	2	2	1	1	0.5	
1250	5	3	2	1	1	0.5	0.5	0.25	
1500	5	2	1	1	0.5	0.5	0.25	0.25	
2000	5	1	1	0.5	0.25	0.25	0.25	0.25	
2500	4	0.5	0.5	0.25	0.25	0.25			
3000	4	0.5	0.25	0.25	0.25				
4000	3	0.25	0.25	0.25	0.25				
5000	2	0.25	0.25	0.25					

\* Suggested initial greasing interval is based on 12 hour per day operation and 150 degree F. maximum housing temperature. For continuous (24 hour) operation, decrease greasing interval by 50%.

- If possible relubricate with grease while in operation, without endangering personnel.
- For ball bearings (operating) relubricate until clean grease is seen purging at the seals. Be careful not to unseat the seal by over lubricating.
- For ball bearings (idle) add 1-2 shots of grease up to 2" bore sizes, and 4-6 shots of grease above 2" bore sizes with hand grease gun.
- For roller bearings relubricate with 4 shots of grease up to 2" bore size, 8 shots for 2"-5" bore size, and 16 shots above 5" bore size with hand grease gun.
- Adjust lubrication frequency based on condition of purged grease.
- A high quality lithium base grease conforming to NLGI Grade 2 consistency, such as those listed below, should be used.

MOBILITH SHC 220	TEXACO MULTIFAK AFB2	SHELL ALVANIA #2
MOBILITH AW2	TEXACO PREMIUM RB	EXXON UNIREX N2

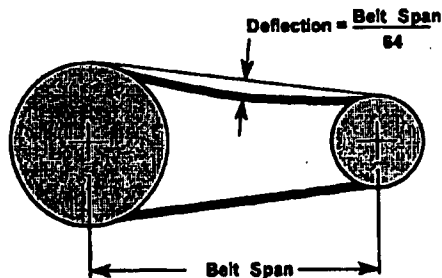
**WARNING:** Lubricate bearings prior to periods of extended shutdowns or storage and rotate shaft monthly to aid in preventing corrosion. If the fan is stored more than three months, the bearings should be purged with new grease prior to start-up.

## V-BELT DRIVES

V-belt drives must be checked on a regular basis for wear, tension, alignment and dirt accumulation. Premature or frequent belt failures can be caused by improper belt tension, (either too loose or too tight) or misaligned sheaves. Abnormally high belt tension or drive misalignment will cause excessive bearing loads and may result in failure of the fan and/or motor bearings. Conversely, loose belts will cause squealing on start-up, excessive belt flutter, slippage, and overheated sheaves. Either excessively loose or tight belts may cause fan vibration.

When replacing V-belts on multiple groove drives all belts should be changed to provide uniform drive loading. Do not pry belts on or off the sheave. Loosen belt tension until belts can be removed by simply lifting the belts off the sheaves. After replacing belts, insure that slack in each belt is on the same side of the drive. Belt dressing should never be used.

Do not install new belts on worn sheaves. If the sheaves have grooves worn in them, they must be replaced before new belts are installed.



The proper tension for operating a V-belt drive is the lowest tension at which the belts will not slip at peak load conditions. For initial tensioning, the proper belt deflection half-way between sheave centers is 1/64" for each inch of belt span. For example, if the belt span is 64 inches, the belt deflection should be 1 inch using moderate thumb pressure at mid-point of the drive. Check belt tension two times during the first 24 hours of operation and periodically thereafter.

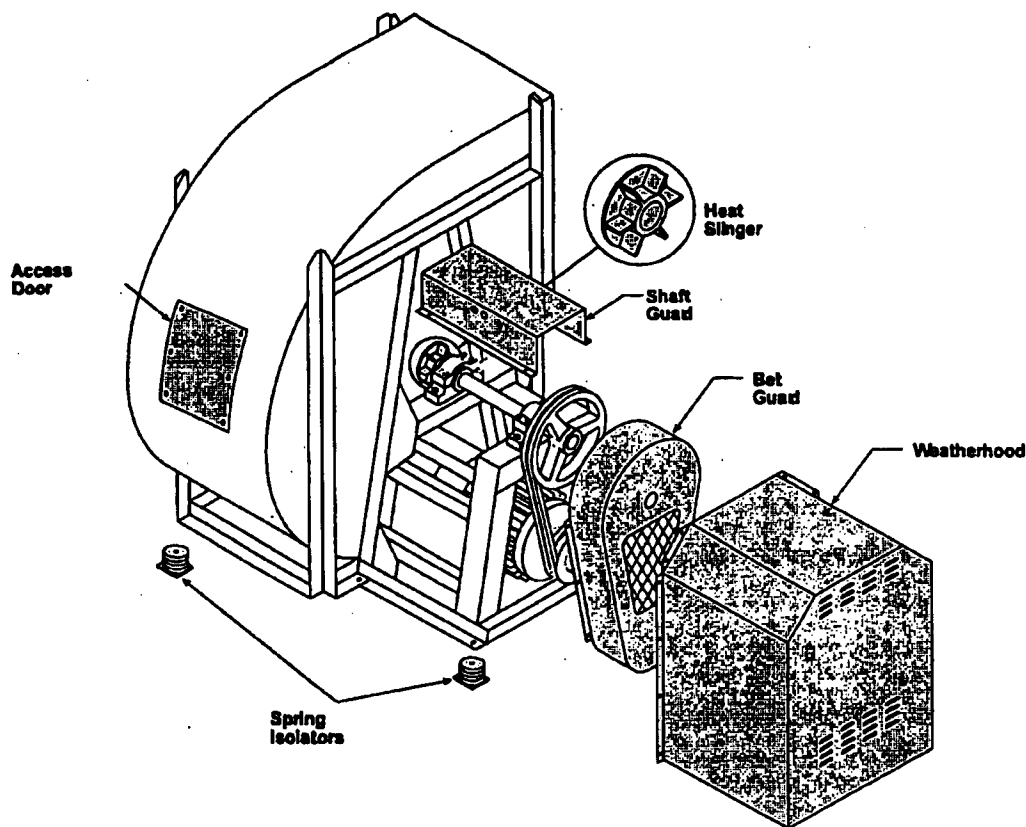
## TROUBLESHOOTING

Problem	Cause	Corrective Action
Excessive Noise	Wheel Rubbing Inlet	Adjust wheel and/or inlet cone. Tighten wheel hub or bearing collars on shaft.
	V-Belt Drive	Tighten sheaves on motor/fan shaft. Adjust belt tension. Align sheaves properly (see page 7). Replace worn belts or sheaves.
	Bearings	Replace defective bearing(s). Lubricate bearings. Tighten collars and fasteners.
	Wheel Unbalance	Clean all dirt off wheel. Check wheel balance, rebalance in-place if necessary.
Low CFM	Fan	Check wheel for correct rotation. Increase fan speed.*
	Duct System	See page 3.
High CFM	Fan	Decrease fan speed.
	Duct system	Resize ductwork. Access door, filters, grills not installed.
Static Pressure Wrong	Duct system has more or less restriction than anticipated	Change obstructions in system. Use correction factor to adjust for temperature/altitude. Resize ductwork. Clean filters/colls. Change fan speed.*
High Horsepower	Fan	Check rotation of wheel. Reduce fan speed.
	Duct System	Resize ductwork. Check proper operation of face and bypass dampers. Check filters and access doors.
Fan Doesn't Operate	Electrical Supply	Check fuses/circuit breakers. Check for switches turned off or disconnected. Check for correct supply voltage.
	Drive	Check for broken belts. Tighten loose pulleys.
	Motor	Assure motor is correct horsepower and not tripping overload protector.
Overheated Bearing	Lubrication	Check for excessive or insufficient grease in the bearing.
	Mechanical	Replace damaged bearing. Relieve excessive belt tension. Align bearings. Check for bent shaft.
Excessive Vibration	Belts	Adjust tightness of belts. Replacement belts should be a matched set.
	System Unbalance	Check alignment of shaft, motor and pulleys. Adjustable pitch pulleys with motors over 15 hp motors are especially prone to unbalance. Check wheel balance, rebalance if necessary.

\* Always check motor amps and compare to nameplate rating. Excessive fan speed may overload the motor and result in motor failure. Do not exceed the maximum cataloged rpm of the fan.

NOTE: Always provide the unit model and serial numbers when requesting parts or service information.

## CENTRIFUGAL / INDUSTRIAL PARTS DRAWING



### WARRANTY

Greenheck warrants this equipment to be free from defects in material and workmanship for period of one year from the purchase date. This warranty limits our responsibility to repairing or replacing, to the original purchaser, any part or parts of said equipment found to be defective upon examination by representatives of Greenheck. Additionally, said part or parts will be returned to and received by the factory only after prior authorization, with transportation charges prepaid.

Greenheck shall not be obligated under this warranty, for payment of any delivery, removal or installation charges with regard to repair or replacement of any defective part or parts.

Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by Greenheck prove defective during this period, they should be returned to the nearest authorized motor service station.



PN 463687 Cent. Belt IOM FS  
Rev. 1 October 2003  
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PAGE 1 OF 2

## DPL SERIES - DELHI PLENUM FAN INSTALLATION AND MAINTENANCE INSTRUCTIONS

MODELS: DPL-12, DPL-13, DPL-15, DPL-16, DPL-18, DPL-20, DPL-22, DPL-24, DPL-27, DPL-30, DPL-33, DPL-36

Read installation and operation instructions carefully before attempting to install, operate or service DELHI PLENUM FANS. Failure to comply with instructions could result in personal injury and/or property damage. Retain instructions for future reference.

### UNPACKING

Once the packaging has been removed inspect the unit carefully. Check for loose, missing, or damaged parts. Rotate the wheel by hand to ensure the wheel spins freely. Tighten all set screws.

### Maximum HP Ratings and Shaft Details

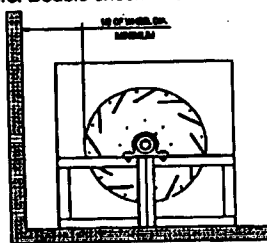
MODEL	DPL-12	DPL-13	DPL-15	DPL-16	DPL-18	DPL-20	DPL-22	DPL-24	DPL-27	DPL-30	DPL-33	DPL-36
SHAFT DIA	1	1	1	1-3/16	1-3/16	1-3/16	1-3/16	1-7/16	1-7/16	1-11/16	1-11/16	1-15/16
MAX HP	3550	3200	2900	2600	2300	2150	1900	1750	1580	1420	1300	1180
MAX RPM	5	5	5	7-1/2	7-1/2	10	10	15	15	20	25	30

### GENERAL SAFETY INSTRUCTIONS

- 1 Always disconnect power source before working on or near a motor or its connected load. Lock the power disconnect in the off position and tag to prevent unauthorized application of power.
- 2 Follow all local and national electrical and safety codes.
- 3 Blower must be electrically grounded. This can be accomplished by using a separate ground wire connected to the bare metal of blower frame, or other suitable means.
- 4 Ensure that the power source conforms to the requirements of your equipment.
- 5 Do not put hands near or allow loose and hanging clothing to be near belts, pulleys, or blower wheel while the unit is running.

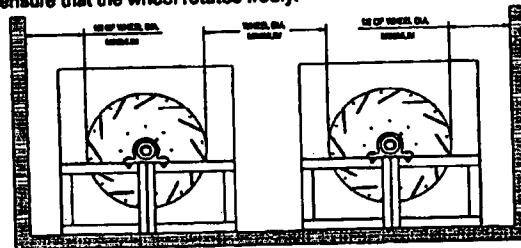
### INSTALLATION

Mount blower on solid rigid flat base and secure with suitable fasteners through mounting holes provided in the cabinet frame assembly and motor frame assembly (optional). Use optional vibration isolators if required. Ensure that all fasteners are tight and secure. Double check wheel set screw for tightness and ensure that the wheel rotates freely.



### ADJACENT PLENUM WALLS

The distance between the fan and walls or ceilings will effect the performance of the fan. The recommended distance between the fan wheel and any wall is a minimum of one - half wheel diameter. Multiple walls reduce the performance even more. When two or more plenums fans are in parallel, there should be at least one fan diameter spacing between the wheels.

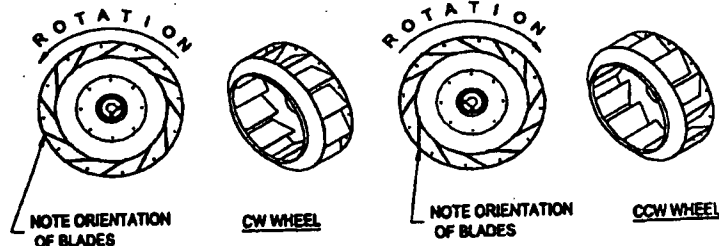


### SIDE BY SIDE PLENUM FANS

Test the fan to ensure the rotation of the wheel is the same as indicated by the arrow marked Rotation.

Note: Wheel Orientation Nomenclature (CW/CCW) is based upon viewing rotation from the drive side.

The illustrated wheels are shown from inlet side.



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PAGE 2 OF 2

## DPL SERIES - DELHI PLENUM FAN INSTALLATION AND MAINTENANCE INSTRUCTIONS

MODELS: DPL-12, DPL-13, DPL-15, DPL-16, DPL-18, DPL-20, DPL-22, DPL-24, DPL-27, DPL-30, DPL-33, DPL-36

### BELT TENSION & PULLEY ALIGNMENT

Proper belt tension and alignment is essential for quiet operation and bearing life. Follow illustrated recommendations on belt installation below.

#### RESILIENT BASE MOUNT MOTORS

With the belt grasped as shown a total deflection of 1" (1/2" on each side) should be easily attained. See figure 1.

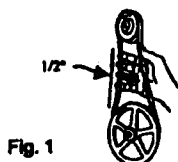
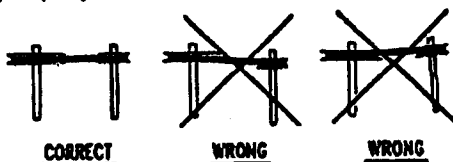


Fig. 1

#### PULLEY ALIGNMENT

Align pulleys with a straight edge to conserve belt life and eliminate unnecessary noise.

NOTE: Pulley alignment may change when adjusting variable pitch pulleys.



Check tension before start-up, after every pulley adjustment and regularly thereafter.

#### RIGID BASE MOTORS - GOOD METHOD

Release the tension from the belt ensuring there is no slack. Measure the distance between shaft centres. Release the tension from the belt ensuring there is no slack. Measure the distance between shaft centres. Add 1% to the shaft centre distance and adjust the shaft centres until that value is obtained. Example: The untensioned shaft centres on a model DPL-22 fan measures 25-8/16" Tensioned centres =  $25-8/16 \times 1.01 = 25-13/16$ " (1/4" extension). See figure 2.

#### RIGID BASE MOTORS - BETTER METHOD

Using a tension gauge, apply 4 lbs of force to the centre of the belt and adjust the tension until a deflection of 1/64" for every inch of shaft centre is obtained. See Figure 3.

#### RIGID BASE MOTORS - PERFECT METHOD

Ideal belt tension is the lowest value under which belt slip will not occur at peak load conditions.



Fig. 2

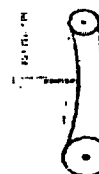


Fig. 3

	MODEL	DPL-12	DPL-13	DPL-15	DPL-16	DPL-18	DPL-20	DPL-22	DPL-24	DPL-27	DPL-30	DPL-33	DPL-36
CENTER LINE	40	15.19	16.19	17.50	18.31	19.75	21.25						
	60/55H	15.69	16.69	17.94	18.81	20.25	21.75	23.94	25.69	27.75	29.75	32.06	34.81
DISTANCE	1437/151	15.94	16.94	18.25	19.13	20.56	22.00	24.19	26.00	28.06	30.00	32.31	35.13
FOR	1827/184	17.31	18.25	19.50	20.44	21.88	23.31	25.56	27.31	29.38	31.38	33.83	36.44
OPTIONAL	2137/215				21.25	22.69	24.13	26.38	28.13	30.13	32.25	34.50	37.25
MOTOR	2547/256							27.56	29.25	31.25	33.38	35.50	38.25
PLATFORM	2847/286										34.13	36.31	39.00

### ELECTRICAL

Connect motor in accordance with applicable codes. Provide properly sized motor overload protection to protect motor against electrical faults and system changes. Confirm proper motor rotation on start-up.

### MAINTENANCE

Inspect periodically for mounting rigidity. Verify belt for wear and tension and adjust as required. Inspect wheel for any dust accumulation and clean as indicated.

### LUBRICATION

Cast iron, pillow block, sealed type, bearings are used on all DPL PLENUM FANS. Operating temperature range is -30 to 230 deg. F. Re-lubrication is unnecessary under most operating conditions. If re-lubrication is required, lubricant should be compatible to Shell Alvania #2. (Lithium base - Grade 2)

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**AAON**

Heating &amp; Cooling Products

*marketing memo*

To: All AAON Sales Representatives

October 1, 2001

## NEW PROMOTIONAL LITERATURE

### The RL Series 40 to 230 Tons for Air Cooled, Evaporative Cooled or Water Cooled

Enclosed with this memo are 50 copies of the new RL Series full color promotional literature. Read this over completely. Get ready for the two RL product sessions that will be held here in Tulsa this month to answer all your questions.

Notice the photo on page 2 is an air cooled unit being built in the West Tulsa plant. The centerfold of product features also shows those taken of evaporative cooled models, as well as, many of the common features of all the models.

#### RL Product Hi-Lites

In this session you will see a complete evaporative cooled unit. All of the features will be reviewed in a unique manner that you will be able to "take home with you" in your pocket. You will not forget this presentation.

#### RL Software

The RL product has many of the features that you always expect from AAON. It also will have new and unrivaled features that you must learn how to select and use to our best advantage. The RL software will be extensively demonstrated in this session. With the RL Series you have fan options that will be presented to you by the software, with the corresponding sound levels.

The Unit Rating sheet gives you all the performance information you need including sound information.

The overall dimensional drawing of the selection will also be an output of the software. No guessing or waiting to get information back from the factory to get the customer the dimensional data they always want immediately.

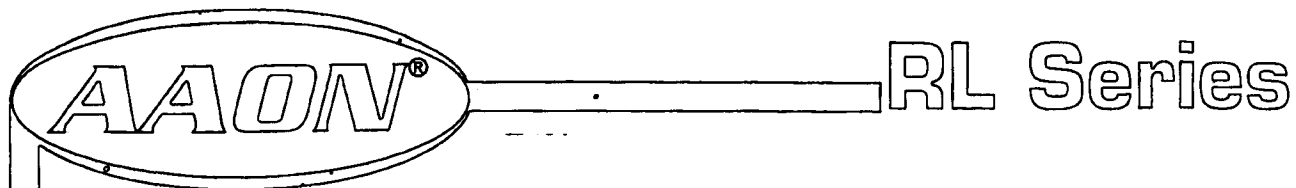
Get your questions ready - Don't miss any of the RL sessions. We look forward to seeing you at the Sales meeting.



Jim Parro  
Marketing Manager

2425 South Yukon • Tulsa, Oklahoma 74107 • PH: (918) 583-2266 • FAX: (918) 583-6094

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45 to 230 tons  
Packaged Rooftop Conditioners  
& Air Handlers

Engineering Specifications  
and Selection Procedures

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# RL Series

## Meeting Today's Requirements with Full Featured, Energy Efficient Products

AAON® has recognized the increasing requirement for larger and more energy efficient packaged rooftop equipment. The RL Model Series has been designed to build upon the AAON experience as the premier supplier of rooftops.

The RL Series is available in a number of configurations to fit the exact job requirements and all the

features that make AAON synonymous with meeting the customer needs.

- Air Cooled Condensing
- Evaporative Cooled Condensing
- Water Cooled Condensing
- Air Handlers

### Standard Features

- Complete factory assembled, piped and wired for a single point power connection.
- Specifically designed with sloping top components for outdoor rooftop applications.
- Cabinet construction is entirely of G90 galvanized steel and a 2000 hour salt spray paint finish.
- Double wall construction throughout with 2 inches of insulation.
- The fan wheels are single inlet airfoil type and directly driven by the motor.
- The entire fan and motor assembly is mounted on spring isolators.
- Side access doors with stainless steel hinges and full perimeter gasketing, open against air pressure. Doors are provided to the filters, blower, compressor/control compartment and other items that need periodic maintenance.
- Access doors have latches that are operable from both sides with provisions for a padlock.
- Unit specific color coded wiring diagrams provided in point-to-point and ladder form.
- Diagrams are laminated in plastic and permanently affixed.
- A walk-in compartment that contains the compressors and electrical control panel.
- Multiple scroll compressors are mounted on an isolation deck for quiet and efficient part load operation.
- All damper blades are constructed for low leakage with an extruded aluminum, hollow core, airfoil design with rubber edge and aluminum end seals.

### Optional Features

Many optional design features are available to allow maximum flexibility to meet the various job conditions and applications.

- A wide selection of economizers from simple manually adjustable to fully modulating operation with enthalpy or CO2 controlled.
- Power exhaust and return fans that are also direct driven by the motor.
- A selection of filters from 4 inch pleated to high efficiency cartridge or bag type filters. These may also be furnished in the final filter position.
- Factory mounted and fully integrated energy recovery wheels that have been rated in accordance with ARI Standard 1060 and bear the ARI Certification symbol.
- A wide selection of electric, gas and hydronic heating options can be made.
- Blank sections for field installation of customer selected custom components.
- Smoke and firestats can be selected for the supply and/or return air.
- Marine service lights can be selected for each airstream compartment.
- Factory mounting and wiring of customer supplied controls.

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**AAON, Inc.**

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**EQUIPMENT DESCRIPTION****UNIT SELECTION EXAMPLE: MODEL AND FEATURE NUMBER STRUCTURE**

<b>BASE MODEL</b>		<b>(23) FEATURE OPTIONS DESCRIBED WITH 31 CHARACTERS</b>
<b>RL - 045 - 3 - 0 - 0A02 - 222</b>		<b>: A B B E - D 0 0 - E B E - A 0 0 - D 0 0 0 B 0 0</b> <b>- 0 0 - 0 B K 0 0 0 0 0 B</b>
<b>BASE UNIT No.</b>		<b>ALL FEATURE NUMBERS MUST BE COMPLETED TO PROPERLY IDENTIFY THE UNIT AND TO INSURE PROMPT ORDER PROCESSING.</b>
<b>TOTAL UNIT IDENTIFICATION NUMBER</b>		

**STANDARD FEATURES INCLUDE**

- CABINET CONSTRUCTION IS ENTIRELY OF G90 GALVANIZED STEEL
- EXTERIOR IS FINISHED WITH A 2000 HOUR SALT SPRAY TESTED PAINT
- CONTROLS & COMPRESSORS ARE LOCATED IN A SINGLE, WALK-IN COMPARTMENT
- HERMETICALLY SEALED SCROLL COMPRESSORS
- COMPRESSORS ARE ISOLATED FOR ACOUSTICAL PURPOSES
- SINGLE POINT POWER CONNECTION
- 115v CONTROL CIRCUIT w/ TERMINAL BLOCK
- LOW AMBIENT OPERATION TO 50 DEGREES
- THERMOSTATIC EXPANSION VALVES
- LIQUID LINE FILTER DRIERS
- MANUAL RESET HIGH PRESSURE SWITCHES
- AUTO RESET LOW PRESSURE SWITCHES
- THE BLOWER WHEELS ARE SINGLE INLET AIRFOIL TYPE & DIRECT DRIVE
- DIRECT DRIVE 3 PHASE 1140 RPM TOTALLY ENCLOSED CONDENSER FAN MOTORS
- STAINLESS STEEL PIANO HINGE ON ACCESS DOORS w/ ACCESS LATCHES THAT ARE OPERABLE FROM BOTH SIDES w/ PROVISIONS FOR PAD LOCKS
- TOP IS SLOPED FOR DRAINAGE
- DOUBLE WALL CONSTRUCTION ON THE AIR SIDE
- BOTTOM OR SIDE SUPPLY AIR & RETURN AIR
- MANUALLY ADJUSTED OUTSIDE AIR HOOD (0-25%)
- P-TRAP CONDENSATE DRAIN (field installed)
- RUN TEST REPORT, INSTALLATION MANUAL, WIRING DIAGRAM & START-UP FORM ARE LOCATED IN THE CONTROL ACCESS COMPARTMENT.

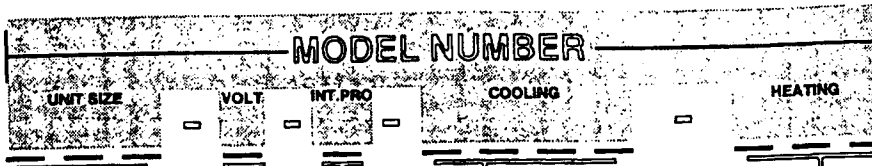
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MODEL  
MASTER

RL

## MODEL NUMBER



UNIT SIZE CABINET		
045	A	100" WIDE
060		
070		
075	B	100" WIDE
095		
100		
110	C	100" WIDE
125		
135		
134	D	142" WIDE
155		
170		
190	E	142" WIDE
210		
230		

VOLTAGE	
2	230v / 3ø / 60Hz
3	480v / 3ø / 60Hz
4	575v / 3ø / 60Hz
8	208v / 3ø / 60Hz

INTERIOR PROTECTION	
Ø	STANDARD
A	INTERIOR Corrosion Protection

B FEATURE  
HEATING

HEAT TYPE	
Ø	NO HEATING
1	ELECTRIC HEAT
2	NAT. GAS Single Rack (SR)
3	NAT. GAS Double Rack (DR)
4	NAT. GAS-HI ALTITUDE (SR)
5	NAT. GAS-HI ALTITUDE (DR)
A	STEAM - Standard Coating Ø
B	STEAM - Phenolic Coating Ø
C	STEAM DIST. - Std. Coat.
D	STEAM DIST. - Phenolic Coat.
E	HOT WATER - Std. Coat.
F	HOT WATER - Phenolic Coat.

Note: Ø Caution: NO FREEZING  
AIR TEMPERATURES.

STAGING	
Ø	NO HEATING
1	GAS & ELECTRIC
2	2 STAGE
3	4 STAGE
4	8 STAGE
5	12 STAGE
A	STEAM & HOT WATER
H	Single Serpentine (STM or HW)
J	Half Serpentine (HW)

## DESIGNATION

NO HEATING	
Ø	GAS & ELECTRIC
1	HEAT 1
2	HEAT 2
3	HEAT 3
4	HEAT 4
5	HEAT 5
6	HEAT 6
7	HEAT 7
8	HEAT 8 (Elect. Heat Only)
STEAM & HOT WATER	
A	1 Row Coil 'A'
B	1 Row Coil 'B'
C	1 Row Coil 'C'
D	1 Row Coil 'D'
E	2 Row Coil 'A'
F	2 Row Coil 'B'
G	2 Row Coil 'C'
H	2 Row Coil 'D'

## STYLE

Ø	BLOW Thru -R22 Dual Circuited Comp.
A	DRAW Thru -R22 Dual Circuited Comp.
F	BLOW Thru Air Handling Unit w/ Vestibule
G	DRAW Thru Air Handling Unit w/ Vestibule
H	BLOW Thru Air Handling Unit w/o Vestibule w/ Front Control Panel
J	DRAW Thru Air Handling Unit w/o Vestibule w/ Front Control Panel
K	BLOW Thru Air Handling Unit w/o Vestibule w/ Back Control Panel
L	DRAW Thru Air Handling Unit w/o Vestibule w/ Back Control Panel
M	BLOW Thru Air Handling Unit w/o Vestibule w/ End Control Panel
N	DRAW Thru Air Handling Unit w/o Vestibule w/ End Control Panel
P	BLOW Thru-R22 Single Circuited Comp. Ø
Q	DRAW Thru-R22 Single Circuited Comp. Ø

Note: Ø Four Compressor Units Only.

A FEATURE  
COOLING

## CONFIGURATION

Ø	NO COOLING
A	Air Cooled w/ 4R Coil - High CFM
B	Air Cooled w/ 6R Coil - High CFM
C	Air Cooled w/ 4R Coil - Low CFM
D	Air Cooled w/ 6R Coil - Low CFM
E	Evaporative w/ 4R Coil - High CFM
F	Evap. Cond. w/ 6R Coil - High CFM
G	Evaporative w/ 4R Coil - Low CFM
H	Evap. Cond. w/ 6R Coil - Low CFM
J	Water Cooled w/ 4R Coil - High CFM
K	Water Cooled w/ 6R Coil - High CFM
L	Water Cooled w/ 4R Coil - Low CFM
M	Water Cooled w/ 6R Coil - Low CFM
U	Chilled Water 4R Coil - High CFM Ø
V	Chilled Water 4R Coil - Low CFM Ø
W	Chilled Water 6R Coil - High CFM Ø
Y	Chilled Water 6R Coil - Low CFM Ø
Z	Chilled Water 8R Coil - High CFM Ø
1	Chilled Water 8R Coil - Low CFM Ø
2	DX Coil 4R - High CFM Ø
3	DX Coil 4R - Low CFM Ø
4	DX Coil 6R - High CFM Ø
5	DX Coil 6R - Low CFM Ø

Note: Ø Air Handling Units Only.

## COATING

Ø	STANDARD
1	PHENOLIC Coated (Evap)
2	STAINLESS Steel Casing (Evap)
3	COPPER FIN (Evap)
4	Option '1' + '2' (Evap)
5	Option '2' + '3' (Evap)
6	Phenolic Ctd (Evap+Cond)
7	Stainless Stl Csg (Evap+Cond)
8	COPPER FIN (Evap+Cond)
9	Option '6' + '7' (Evap+Cond)
A	Option '7' + '8' (Evap+Cond)
B	PHENOLIC Coated (Cond)
C	STAINLESS Steel Casing (Cond)
D	COPPER FIN (Cond)
E	Option 'B' + 'C' (Cond)
F	Option 'C' + 'D' (Cond)

## STAGING

Ø	NO COOLING
2	2 STAGE (Air OR Evap. Cooled)
3	3 STAGE (Air OR Evap. Cooled)
4	4 STAGE (Air OR Evap. Cooled)
5	6 STAGE (Air OR Evap. Cooled)
6	8 STAGE (Air OR Evap. Cooled)
A	SINGLE Serpentine 8 FPI (CW)
B	HALF Serpentine 8 FPI (CW)
C	2 STAGE w/ Brazed Plate Cond.
D	3 STAGE w/ Brazed Plate Cond.
E	4 STAGE w/ Brazed Plate Cond.
F	6 STAGE w/ Brazed Plate Cond.
G	8 STAGE w/ Brazed Plate Cond.
H	2 STAGE w/ Shell & Tube Cond.
J	3 STAGE w/ Shell & Tube Cond.
K	4 STAGE w/ Shell & Tube Cond.
L	6 STAGE w/ Shell & Tube Cond.
M	8 STAGE w/ Shell & Tube Cond.
N	SINGLE Serpentine 10 FPI (CW)
P	HALF Serpentine 10 FPI (CW)
Q	SINGLE Serpentine 12 FPI (CW)
R	HALF Serpentine 12 FPI (CW)

III  
CL 600



# **RL - OPTIONAL FEATURES**

## **FEATURE NUMBER**

### **RETURN / OUTSIDE AIR OPTIONS (1)**

#### **A FEATURE - OUTSIDE AIR SECTION**

- 0 STANDARD - Manual Outside Air
- A ECONOMIZER
- B POWER EXHAUST
- C POWER RETURN
- D HEAT WHEEL- Small (T) (one 74" wheel)
- E HEAT WHEEL- Medium (T) (one 81" wheel)
- F HEAT WHEEL- Large (T) (two 74" wheels)
- G HEAT WHEEL- Ex-Large (T) (two 81" wheels) Ⓣ
- H HEAT WHEEL- Small (S) (one 74" wheel) Ⓣ
- J HEAT WHEEL- Medium (S) (one 81" wheel) Ⓣ
- K HEAT WHEEL- Large (S) (two 74" wheels) Ⓣ
- L HEAT WHEEL- Ex-Large (S) (two 81" wheels) Ⓣ
- M 100% OUTSIDE AIR (Non-Motorized - NO R/A)
- N MOTORIZED OSA - 2 Position (0 - 60%)
- P MOTORIZED OSA - 2 Position (0 - 100% - NO R/A)

Note: Ⓣ Contact Factory For SPA on Sensible Ht/Whls.

Ⓣ D and E Cabinet ONLY.

#### **B FEATURE - R/A BLOWER CONFIG.**

- 0 STANDARD - (No Return or Exhaust Blower)
- A 1 BLOWER (Standard Efficiency Motor)
- B 2 BLOWERS (Standard Efficiency Motor)
- C 1 BLOWER (Premium Efficiency Motor)
- D 2 BLOWERS (Premium Efficiency Motor)
- E OPTION 'C' w/VFD
- F OPTION 'D' W/ Two Motors on One VFD
- G OPTION 'D' W/ Two Motors on Two VFD's

#### **C FEATURE - RETURN AIR BLOWER**

- 0 STANDARD - (No Return or Exhaust Blower)
- A BLOWER 'A' (36" Dia. 6 Blade)
- B BLOWER 'B' (42" Dia. 9 Blade)
- C BLOWER 'C' (42" Dia. 12 Blade)
- D BLOWER 'D' (48" Dia. 16 Blade)

#### **D FEATURE - RETURN AIR MOTOR**

- 0 STANDARD - (No Return or Exhaust Blower)
- D 3.0 HP (1170 RPM)
- E 5.0 HP (1170 RPM)
- F 7.5 HP (1170 RPM)
- G 10 HP (1170 RPM)
- H 15 HP (1170 RPM)
- J 20 HP (1170 RPM)
- K 25 HP (1170 RPM)
- L 30 HP (1170 RPM)
- M 40 HP (1170 RPM)
- N 50 HP (1170 RPM)
- U 3.0 HP (1760 RPM)
- V 5.0 HP (1760 RPM)
- W 7.5 HP (1760 RPM)
- X 10 HP (1760 RPM)
- Y 15 HP (1760 RPM)
- Z 20 HP (1760 RPM)
- 1 25 HP (1760 RPM)
- 2 30 HP (1760 RPM)
- 3 40 HP (1760 RPM)
- 4 50 HP (1760 RPM)

### **OUTSIDE AIR CONTROL (2)**

- 0 STANDARD - (No Actuator)
- A 3 POSITION ECON. w/ Sensible Limit
- B 3 POSITION ECON. w/ Enthalpy Limit
- C FULL MODULATING ECON. w/ Sensible Limit
- D FULL MODULATING ECON. w/ Enthalpy Limit
- E DDC ECON. CONTROL
- F CONSTANT VOLUME OSA
- G OPTION 'F' + OPTION 'A'
- H OPTION 'F' + OPTION 'B'
- J OPTION 'F' + OPTION 'C'
- K OPTION 'F' + OPTION 'D'
- L OPTION 'F' + OPTION 'E'
- M CO2 OVERRIDE + OPTION 'A'
- N CO2 OVERRIDE + OPTION 'B'
- P CO2 OVERRIDE + OPTION 'C'
- Q CO2 OVERRIDE + OPTION 'D'
- R CO2 OVERRIDE + OPTION 'E'
- S DUAL MIN. POSITION POT. w/ Sensible Limit
- T DUAL MIN. POSITION POT. w/ Enthalpy Limit
- U 2 POSITION ECON.

### **DISCHARGE LOCATIONS (3)**

- 0 BOTTOM DISCHARGE
- A FRONT DISCHARGE
- B BACK DISCHARGE
- C TOP DISCHARGE

### **RETURN AIR LOCATIONS (4)**

- 0 BOTTOM RETURN (Or No Return on 100% OSA)
- A END RETURN (No ERC or PWR Exh)
- B FRONT RETURN HIGH CFM (No ERC or PWR Exh)
- C FRONT RETURN LOW CFM (No ERC or PWR Exh)
- D BACK RETURN HIGH CFM (No ERC or PWR Exh)
- E BACK RETURN LOW CFM (No ERC or PWR Exh)
- F FRONT RETURN HIGH CFM (w/ ERC or PWR Exh)
- G FRONT RETURN LOW CFM (w/ ERC or PWR Exh)
- H BACK RETURN HIGH CFM (w/ ERC or PWR Exh)
- J BACK RETURN LOW CFM (w/ ERC or PWR Exh)

### **SUPPLY AIR OPTIONS (5)**

#### **A FEATURE - S/A BLOWER CONFIG.**

- 0 1 BLOWER (Standard Efficiency Motor)
- A 2 BLOWERS (Standard Efficiency Motor)
- B 3 BLOWERS (Standard Efficiency Motor)
- C 4 BLOWERS (Standard Efficiency Motor)
- D 1 BLOWER (Premium Efficiency Motor)
- E 2 BLOWERS (Premium Efficiency Motor)
- F 3 BLOWERS (Premium Efficiency Motor)
- G 4 BLOWERS (Premium Efficiency Motor)
- H 1 BLOWER (Prem. Eff. Mtr) w/ VFD
- J 2 BLOWERS (Prem. Eff. Mtr) w/ 1-VFD
- K 2 BLOWERS (Prem. Eff. Mtr) w/ 2-VFD's
- L 3 BLOWERS (Prem. Eff. Mtr) w/ 1-VFD
- M 3 BLOWERS (Prem. Eff. Mtr) w/ 3-VFD's
- N 4 BLOWERS (Prem. Eff. Mtr) w/ 1-VFD
- Q 4 BLOWERS (Prem. Eff. Mtr) w/ 4-VFD's
- R 4 BLOWERS (Prem. Eff. Mtr) w/ 2-VFD's

#### **B FEATURE - SUPPLY AIR BLOWER**

- A BLOWER 'A' (27" Diameter)
- B BLOWER 'B' (30" Diameter)
- C BLOWER 'C' (33" Diameter)
- D BLOWER 'D' (36.5" Diameter)
- E BLOWER 'E' (42.5" Diameter)
- F BLOWER 'A' (27" Dia.) w/ Backdraft Damper
- G BLOWER 'B' (30" Dia.) w/ Backdraft Damper
- H BLOWER 'C' (33" Dia.) w/ Backdraft Damper
- J BLOWER 'D' (36.5" Dia.) w/ Backdraft Damper
- K BLOWER 'E' (42.5" Dia.) w/ Backdraft Damper

#### **C FEATURE - SUPPLY AIR MOTOR**

- |                     |                     |
|---------------------|---------------------|
| D 3.0 HP (1170 RPM) | T 3.0 HP (1760 RPM) |
| E 5.0 HP (1170 RPM) | U 5.0 HP (1760 RPM) |
| F 7.5 HP (1170 RPM) | V 7.5 HP (1760 RPM) |
| G 10 HP (1170 RPM)  | W 10 HP (1760 RPM)  |
| H 15 HP (1170 RPM)  | X 15 HP (1760 RPM)  |
| J 20 HP (1170 RPM)  | Y 20 HP (1760 RPM)  |
| K 25 HP (1170 RPM)  | Z 25 HP (1760 RPM)  |
| L 30 HP (1170 RPM)  | 1 30 HP (1760 RPM)  |
| M 40 HP (1170 RPM)  | 2 40 HP (1760 RPM)  |
| N 50 HP (1170 RPM)  | 3 40 HP (1760 RPM)  |
|                     | 4 50 HP (1760 RPM)  |

### **FILTER OPTIONS (6)**

#### **A FEATURE - PRE FILTER TYPE**

- 0 2" PLEATED (Standard Position)
- A 4" PLEATED (Standard Position)
- B 2" PERMANENT FRAME
- C 2" Pre / 12" Cartridge 65% Eff. (Std. Position) Ⓣ
- D 2" Pre / 12" Cartridge 85% Eff. (Std. Position) Ⓣ
- E 2" Pre / 12" Cartridge 95% Eff. (Std. Position) Ⓣ
- F 4" Pre / 12" Cartridge 65% Eff. (Std. Position) Ⓣ
- G 4" Pre / 12" Cartridge 85% Eff. (Std. Position) Ⓣ
- H 4" Pre / 12" Cartridge 95% Eff. (Std. Position) Ⓣ
- J 2" Pre / 30" Bag 85% Eff. (Std. Position) Ⓣ
- K 2" Pre / 30" Bag 95% Eff. (Std. Position) Ⓣ
- L 4" Pre / 30" Bag 85% Eff. (Std. Position) Ⓣ
- M 4" Pre / 30" Bag 95% Eff. (Std. Position) Ⓣ
- N 2" PLEATED (Pre Position) Ⓣ
- P 4" PLEATED (Pre Position) Ⓣ
- Q 2" PERMANENT (Pre Position) Ⓣ
- R 2" Pre / 12" Cartridge 65% Eff. (Pre Position) Ⓣ
- S 2" Pre / 12" Cartridge 85% Eff. (Pre Position) Ⓣ
- T 2" Pre / 12" Cartridge 95% Eff. (Pre Position) Ⓣ
- U 4" Pre / 12" Cartridge 65% Eff. (Pre Position) Ⓣ
- V 4" Pre / 12" Cartridge 85% Eff. (Pre Position) Ⓣ
- W 4" Pre / 12" Cartridge 95% Eff. (Pre Position) Ⓣ
- Y 2" Pre / 30" Bag 85% Eff. (Pre Position) Ⓣ
- Z 2" Pre / 30" Bag 95% Eff. (Pre Position) Ⓣ
- 1 4" Pre / 30" Bag 85% Eff. (Pre Position) Ⓣ
- 2 4" Pre / 30" Bag 95% Eff. (Pre Position) Ⓣ

Note: Ⓣ Requires Feature 6B Option N, 'P', or 'Q' To Be Selected.

Ⓣ Blow Thru Units ONLY.

#### **B FEATURE - FINAL FILTER TYPE**

- 0 STANDARD
- A 12" Cartridge 85% Eff.-Filter Box A
- B 12" Cartridge 85% Eff.-Filter Box B
- C 12" Cartridge 85% Eff.-Filter Box C
- D 12" Cartridge 95% Eff.-Filter Box A
- E 12" Cartridge 95% Eff.-Filter Box B
- F 12" Cartridge 95% Eff.-Filter Box C
- G 30" Bag 85% Eff.-Filter Box A
- H 30" Bag 85% Eff.-Filter Box B
- J 30" Bag 85% Eff.-Filter Box C
- K 30" Bag 95% Eff.-Filter Box A
- L 30" Bag 95% Eff.-Filter Box B
- M 30" Bag 95% Eff.-Filter Box C
- N Pre Filter Box A (Hi-Eff.)-No Final Filter
- P Pre Filter Box B (Hi-Eff.)-No Final Filter
- Q Pre Filter Box C (Hi-Eff.)-No Final Filter

#### **C FEATURE - FILTER OPTIONS**

- 0 STANDARD
- A CFS Pre Filter
- B CFS Final Filter
- C Magnehetic Gauge Pre Filter
- D Magnehetic Gauge Final Filter
- E Option A + B
- F Option A + C
- G Option A + D
- H Option B + C
- J Option B + D
- K Option A + B + C
- L Option A + B + D
- M Option A + C + D
- N Option B + C + D
- P Option A + B + C + D



7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
<b>REFRIGERATION CTL (7)</b>							<b>CABINET OPTIONS (16)</b>				<b>TYPE (23)</b>					
STANDARD A = 5 MTD ON & MTD OFF B = 20 STD C = 115v OUTLET FIELD WIRED D = 115v OUTLET FACTORY WIRED E = Option A + B F = Option A + C G = Option A + D H = Option A + B + C J = Option A + B + D K = Option B + C L = Option B + D							STANDARD A = STAINLESS Steel Drain Pans B = MARINE SERVICE LIGHTS C = BASE INSULATION D = Option 'A' + 'B' E = Option 'A' + 'C' F = Option 'B' + 'C' G = Option 'A' + 'B' + 'C'				STANDARD (Incl. 'GRAY PAINT') U = Special Price Auth. & Special Color Exterior Paint X = SPECIAL PRICE AUTHORIZATION (Includes 'B' above)					
<b>REFRIGERATION OPTS (8)</b>							<b>OPTION BOXES (15)</b>				<b>OPEN (for future exp) (22)</b>					
STANDARD A = HOT GAS BYPASS Lead Stage (HGBLead) B = HOT GAS REHEAT COIL (HGRC) C = MODULATING Hot Gas Reheat Coil (MHGR) D = HGB LEAD + HGB LAG E = HGB LEAD + HGRC F = HGB LEAD + MHGR G = HGB LEAD + HGB LAG + HGRC H = HGB LEAD + HGB LAG + MHGR J = SUBCOOLING COIL (Reheat Position) K = SUBCOOLING COIL + HGB Lead L = SUBCOOLING COIL + HGB Lead + HGB LAG M = Single Point Water Connection (Chill Water Units)							STANDARD A = 2 Ft. Box After HEAT B = 2 Ft. Box After COOLING C = 2 Ft. Box After PRE FILTER D = 2 Ft. Box After RETURN E = 4 Ft. Box After HEAT F = 4 Ft. Box After COOLING G = 4 Ft. Box After PRE FILTER H = 4 Ft. Box After RETURN J = 6 Ft. Box After HEAT K = 6 Ft. Box After COOLING L = 6 Ft. Box After PRE FILTER M = 6 Ft. Box After RETURN N = 8 Ft. Box After HEAT P = 8 Ft. Box After COOLING Q = 8 Ft. Box After PRE FILTER R = 8 Ft. Box After RETURN S = 2 Ft. Box After PREHEAT COIL T = 4 Ft. Box After PREHEAT COIL U = 6 Ft. Box After PREHEAT COIL V = 8 Ft. Box After PREHEAT COIL				STANDARD A = STANDARD (No Evap. or Water Condenser) B = BASIC PACKAGE (Evap. Cond. or Water Cooled) C = LOW AMBIENT Package (Evap. Cond) D = BALANCING VALVES (Water Cond) E = SINGLE POINT Water Connection (Water Cond) F = Insulated Service Vestibule (Water Cond & Elect. Ht) G = MOTORIZED SHUT-OFF VALVE (Water Cond) H = HEAD PRESSURE CONTROL (Water Cond) J = Option 'C' + 'D' K = Option 'C' + 'E' L = Option 'C' + 'F' M = Option 'D' + 'E' N = Option 'D' + 'F' P = Option 'D' + 'G' Q = Option 'E' + 'F' R = Option 'E' + 'G' S = Option 'F' + 'G' T = Option 'C' + 'D' + 'E' U = Option 'C' + 'D' + 'F' V = Option 'C' + 'D' + 'G' W = Option 'D' + 'E' + 'F' Y = Option 'D' + 'E' + 'G' Z = Option 'E' + 'F' + 'G' 1 = Option 'C' + 'D' + 'E' + 'F' 2 = Option 'C' + 'D' + 'E' + 'G' 3 = Option 'C' + 'D' + 'F' + 'G' 4 = Option 'C' + 'E' + 'F' + 'G' 5 = Option 'C' + 'D' + 'E' + 'F' + 'G'					
<b>REFRIGERATION ACCESS (9)</b>							<b>CABINET OPTIONS (17)</b>				<b>EVAP. &amp; WATER CONDENSER (21)</b>					
STANDARD A = SIGHT GLASS B = COMPRESSOR ISOLATION VALVES C = Sight Glass + Comp. Iso. Vlv.							STANDARD A = ACCESS DOOR WINDOWS B = BURGLAR BARS C = PERF LINER S/A PLENUM D = PERF LINER R/A PLENUM E = R/A PLENUM SOUND TRAP F = Option 'A' + 'B' G = Option 'A' + 'C' H = Option 'A' + 'D' J = Option 'A' + 'E' K = Option 'B' + 'C' L = Option 'B' + 'D' M = Option 'B' + 'E' N = Option 'C' + 'D' P = Option 'C' + 'E' Q = Option 'A' + 'B' + 'C' R = Option 'A' + 'B' + 'D' S = Option 'A' + 'B' + 'E' T = Option 'A' + 'C' + 'D' U = Option 'A' + 'C' + 'E' V = Option 'B' + 'C' + 'D' W = Option 'B' + 'C' + 'E' Y = Option 'A' + 'B' + 'C' + 'D' Z = Option 'A' + 'B' + 'C' + 'E'				STANDARD (No Evap. or Water Condenser) A = BASIC PACKAGE (Evap. Cond. or Water Cooled) B = LOW AMBIENT Package (Evap. Cond) C = BALANCING VALVES (Water Cond) D = SINGLE POINT Water Connection (Water Cond) E = Insulated Service Vestibule (Water Cond & Elect. Ht) F = MOTORIZED SHUT-OFF VALVE (Water Cond) G = HEAD PRESSURE CONTROL (Water Cond) H = Option 'C' + 'D' J = Option 'C' + 'E' K = Option 'C' + 'F' L = Option 'D' + 'E' M = Option 'D' + 'F' P = Option 'D' + 'G' Q = Option 'E' + 'F' R = Option 'E' + 'G' S = Option 'F' + 'G' T = Option 'C' + 'D' + 'E' U = Option 'C' + 'D' + 'F' V = Option 'C' + 'D' + 'G' W = Option 'D' + 'E' + 'F' Y = Option 'D' + 'E' + 'G' Z = Option 'E' + 'F' + 'G' 1 = Option 'C' + 'D' + 'E' + 'F' 2 = Option 'C' + 'D' + 'E' + 'G' 3 = Option 'C' + 'D' + 'F' + 'G' 4 = Option 'C' + 'E' + 'F' + 'G' 5 = Option 'C' + 'D' + 'E' + 'F' + 'G'					
<b>POWER OPTIONS (10)</b>							<b>CUSTOMER CODE (18)</b>				<b>CODE OPTIONS (19)</b>					
STANDARD - POWER BLOCK A = POWER SWITCH - (225 AMPS) B = POWER SWITCH - (400 AMPS) C = POWER SWITCH - (600 AMPS) D = POWER SWITCH - (800 AMPS) E = POWER SWITCH - (1200 AMPS)							STANDARD A = STANDARD				STANDARD ETL U.S.A. Listing ① A = MEA (New York) B = CHICAGO CODE (Cool & Gas) C = CHICAGO CODE (Cool & Elect Heat) D = CHICAGO (Cool Only) E = CHICAGO (Gas Heat Only) F = CHICAGO CODE (Elect Heat Only) G = CHICAGO CODE (No Cool NoHeat) H = ETL U.S.A + CANADA Listing J = NO ETL Note: ① May Require Additional Pricing if SPA's Are Used.					
<b>SAFETY OPTIONS (11)</b>							<b>UNIT CONFIG. (20)</b>									
STANDARD A = R/A & S/A FIRESTAT B = R/A SMOKE DETECTOR C = S/A SMOKE DETECTOR D = R/A & S/A SMOKE DETECTOR E = R/A & S/A FIRESTAT + R/A SD F = R/A & S/A FIRESTAT + S/A SD G = R/A & S/A FS + S/A + R/A SD							STANDARD (One Piece Unit) A = Two Piece Unit (Split After Evap. Coil)									
<b>CONTROLS (12)</b>																
STANDARD CONTROLS A = LOW LIMIT CONTROLS B = PHASE & BROWN OUT PROTECTION C = HEATWHEEL DEFROST CONTROL D = HEATWHEEL ROTATION DETECTION E = Option A + B F = Option A + C G = Option A + D H = Option B + C J = Option B + D K = Option C + D L = Option A + B + C M = Option A + B + D N = Option A + C + D O = Option A + B + C + D P = Option A + B + D Q = Option A + C + D R = Option B + C + D S = Option A + B + C + D																
<b>SPECIAL CONTROLS (13)</b>																
STANDARD CONTROLS A = W973 HONEYWELL CONTROLLER B = W7100 HONEYWELL CONTROLLER C = W7100 Controller + Expansion Board D = VAV UNIT CONTROLLER E = CONSTANT VOLUME UNIT CONTROLLER F = MAKE UP AIR UNIT CONTROLLER G = HEAT COOL Changeover Controller H = FIELD Installed DDC Controls (By Others) J = FACTORY Installed DDC Controls (By Others) ① Note: ① Requires SPA.																
<b>PREHEAT OPTIONS (14)</b>																
<b>A FEATURE - CONFIGURATION</b> A = STANDARD (No Preheat) B = HOT WATER COIL Preheat O/A C = STEAM Distributing Coil Preheat O/A D = HOT WATER COIL Preheat (4 Fl. Box) E = STEAM Distributing Coil Preheat (4 Fl. Box)																
<b>14-B FEATURE - SIZING</b>																
STANDARD (No Preheat) A = HEAT QUANTITY 'A' B = HEAT QUANTITY 'B' C = HEAT QUANTITY 'C' D = HEAT QUANTITY 'D'																

## RL Specifications

Table 1. RL NOMINAL CAPACITIES

CABINET WIDTH	CABINET	UNIT	80/67 EDB/EWB - 95/75 OADB/OAWB			
			EVAP COND CAPACITY	AIR-COOLED CAPACITY	EVAP FACE AREA	DX COIL CFM @ 600 FPM
100" WIDE	A	45	44.3	40.6	37.5	22,500
		60	57.0	52.8	50.0	30,000
		70	67.2	60.8	50.0	30,000
	B	75	74.8	68.2	53.1	31,860
		95	93.5	87.8	53.1	31,860
	C	100	100.8	93.2	65.6	39,360
		110	108.4	99.3	65.6	39,360
		125	125.9	116.5	71.9	43,125
		135	135.2	125.3	71.9	43,125
	142" WIDE	D	134	132.8	123.9	79.2
155			152.8	142.5	86.8	52,080
170			171.5	160.5	94.4	56,640
E		190	191.1	177.4	110.7	66,420
		210	210.1	193.9	118.3	70,980
	230	228.8	212.6	125.9	75,540	

Table 1 shows the nominal capacities for air cooled DX and evaporatively condensed DX units with a cooling coil face velocity of 600 fpm and entering air conditions of 80/67 F, with ambient conditions of 95/75 F. Water cooled DX capacities are approximately the same as the evaporatively condensed capacities with a condenser entering water temperature of 85 F at 3.0 gpm/ton.

Table 2. RL COMPRESSORS

CABINET WIDTH	CABINET	UNIT	CFM TYPE	COMPRESSOR #1	COMPRESSOR #2
100" WIDE	A	45	HIGH	(4) ZR-108	--
			LOW		
		60	HIGH	(4) ZR-144	--
			LOW		
		70	HIGH	(2) ZR-144	(2) ZR-19
			LOW		
	B	75	HIGH	(4) ZR-19	--
			LOW		
		95	HIGH	(2) ZR-19	(2) ZR-300
			LOW		
	C	100	HIGH	(2) ZR-144	(4) ZR-19
			LOW		
		110	HIGH	(6) ZR-19	--
			LOW		
		125	HIGH	(4) ZR-19	(2) ZR-300
			LOW		
		135	HIGH	(2) ZR-144	(4) ZR-300
			LOW		
142" WIDE	D	134	HIGH	(4) ZR-19	(2) ZR-300
			LOW		
		155	HIGH	(2) ZR-19	(4) ZR-300
			LOW		
		170	HIGH	(6) ZR-300	--
			LOW		
	E	190	HIGH	(4) ZR-19	(4) ZR-300
			LOW		
		210	HIGH	(2) ZR-19	(6) ZR-300
			LOW		
		230	HIGH	(8) ZR-300	--
			LOW		

Table 2 shows the compressor types and quantities used in the RL Product Line.

## RL Specifications

**Table 3. RL CONDENSER FANS AND PUMP**

CABINET WIDTH	CABINET	UNIT	AIR COOLED CONDENSER						EVAPORATIVE CONDENSER					
			FAN #1		FAN #2		CFM	FAN		PUMP				CFM
			QTY	HP	QTY	HP		QTY	HP	HP	BHP	GPM	HEAD	
100" WIDE	A	45	2	2			30,600	1	2	3	2	150	40	18,472
		60	2	3			34,400	1	2			150	40	11,350
		70	2	3			33,200	2	2			150	40	18,071
	B	75	3	3			52,800	2	2	3	3	200	40	17,688
		95	4	3			68,000	2	3			200	40	18,772
	C	100	4	3			67,800	2	3	5	4	275	40	22,868
		110	4	3			67,800	2	3			275	40	23,490
		125	4	5			74,000	2	3			275	40	24,233
		135	4	5			73,000	2	3			275	40	24,563
142" WIDE	D	134	5	3			78,000	2	3	5	4	350	40	25,758
		155	4	5	1	3	90,100	3	3			350	40	33,240
		170	4	5	2	3	103,000	3	3			350	40	34,213
	E	190	4	3	2	7.5	120,000	4	3	7.5	6.3	450	40	44,127
		210	4	3	2	7.5	118,400	4	3			450	40	45,225
		230	4	7.5	2	3	135,000	4	3			450	40	46,209

Table 3 shows condenser fans and pumps for air cooled and evaporatively condensed RL units. Water cooled units do not include pumps.

## RL Specifications

Table 5. RL CHILLED WATER COIL DATA

CABINET WIDTH	CABINET	UNIT	CFM TYPE	Chilled Water Coil				CFM @ 600 FPM	Type
				FIN LENGTH	FIN HEIGHT	QTY	AREA		
100" WIDE	A	45	HIGH	86.5	31.25	2	37.5	22,526	Slab
			LOW	86.5	50	1	30.0	18,021	Slab
		60	HIGH	86.5	41.25	2	49.6	29,734	Slab
			LOW	86.5	50	1	30.0	18,021	Slab
		70	HIGH	86.5	41.25	2	49.6	29,734	Slab
			LOW	86.5	50	1	30.0	18,021	
	B	75	HIGH	86.5	43.75	2	52.6	31,536	Slab
			LOW	86.5	57.5	1	34.5	20,724	
		95	HIGH	86.5	43.75	2	52.6	31,536	Slab
			LOW	86.5	36.25	2	43.6	26,130	
	C	100	HIGH	86.5	36.25	3	65.3	39,195	Staggered
			LOW	86.5	43.75	2	52.6	31,536	Slab
		110	HIGH	86.5	36.25	3	65.3	39,195	Staggered
			LOW	86.5	43.75	2	52.6	31,536	Slab
		125	HIGH	86.5	40	3	72.1	43,250	Staggered
			LOW	86.5	32.5	3	58.6	35,141	Slab
		135	HIGH	86.5	40	3	72.1	43,250	Staggered
			LOW	86.5	35	3	63.1	37,844	
142" WIDE	D	134	HIGH	59	32.5	6	79.9	47,938	Staggered
			LOW	59	36.25	4	59.4	35,646	Slab
		155	HIGH	59	35	6	86.0	51,625	Staggered
			LOW	59	40	4	65.6	39,333	Slab
		170	HIGH	59	36.25	6	89.1	53,469	Staggered
			LOW	59	43.75	4	71.7	43,021	Slab
	E	190	HIGH	59	32.5	8	106.5	63,917	Staggered
			LOW	59	35	6	86.0	51,625	
		210	HIGH	59	35	8	114.7	68,833	Staggered
			LOW	59	36.25	6	89.1	53,469	
		230	HIGH	59	36.25	8	118.8	71,292	Staggered
			LOW	59	40	6	98.3	59,000	

Table 5 contains chilled water coil dimensional data for the RL units. Chilled water coils are available in 8, 10, and 12 fpi. Circuiting options are full and half circuit.

## RL Specifications

Table 6a. RL HEATING COIL DATA

CABINET WIDTH	CABINET	UNIT	HEATING COIL SIZE		HEATING COIL QTY.	HW COIL 1/2" TUBES			STEAM DISTRIBUTING COILS			FACE AREA
						CIRCUITING HALF & FULL						
			1 Row	2 Row		FINNED LENGTH	FINNED HEIGHT	FPI	FIN LENGTH	FIN HEIGHT	FPI	
100" WIDE	A	45	A	E	1	60	75	10	60	75	10	31.3
		60	B	F	1	60	60	10	60	60	10	25.0
		70	C	G	1	48	52.5	10	48	52.5	10	17.5
			D	H	1	36	42.5	10	36	42	10	10.5
	B	75	A	E	1	60	75	10	60	75	10	31.3
			B	F	1	60	60	10	60	60	10	25.0
		95	C	G	1	48	52.5	10	48	52.5	10	17.5
			D	H	1	36	42.5	10	36	42	10	10.5
	C	100	A	E	1	84	75	10	84	75	10	43.8
		110	B	F	1	60	82.5	10	60	82.5	10	34.4
		125	C	G	1	60	60	10	60	60	10	25.0
		135	D	H	1	48	52.5	10	48	52.5	10	17.5
142" WIDE	D	134	A	E	2	60	75	10	60	75	10	31.3
		155	B	F	2	48	65	10	48	66	10	22.0
		170	C	G	1	60	75	10	60	75	10	31.3
			D	H	1	48	52.5	10	48	52.5	10	17.5
	E	190	A	E	2	63	85	10	63	84	10	36.8
		210	B	F	2	60	75	10	60	75	10	31.3
		230	C	G	2	48	65	10	48	66	10	22.0
			D	H	1	60	60	10	60	60	10	25.0

Table 6a contains physical data for hot water and steam coils located in the reheat position

Table 6b. RL OUTSIDE AIR PRE-HEAT COIL DATA (FEATURE 14A-C&amp;D)

CABINET WIDTH	HEATING COIL SIZE	HEATING COIL QTY.	HOT WATER 1/2" TUBES					STEAM DISTRIBUTING 5/8" TUBES				
			FINNED HEIGHT	FINNED LENGTH	ROWS	FPI	AREA	FINNED HEIGHT	FIN LENGTH	ROWS	FPI	AREA
100" WIDE	A	1	32.5	90	1	6	20	31.5	90	1	6	19.7
	B	1	32.5	90	1	10	20	31.5	90	1	10	19.7
	C	1	32.5	90	2	6	20	31.5	90	2	6	19.7
	D	1	32.5	90	2	10	20	31.5	90	2	10	19.7
142" WIDE	A	2	32.5	63	1	6	28	31.5	63	1	6	27.6
	B	2	32.5	63	1	10	28	31.5	63	1	10	27.6
	C	2	32.5	63	2	6	28	31.5	63	2	6	27.6
	D	2	32.5	63	2	10	28	31.5	63	2	10	27.6

Table 6b contains physical data for hot water and steam coils located in the preheat position in the mixed air stream.

If this coil is used in conjunction with a heat wheel it is located down stream of the heat wheel

Table 6c. RL PRE-HEAT COIL DATA (FEATURE 14A-A&amp;B)

CABINET WIDTH	HEATING COIL SIZE	HEATING COIL QTY.	HOT WATER 1/2" TUBES					STEAM DISTRIBUTING 5/8" TUBES				
			FINNED HEIGHT	FINNED LENGTH	ROWS	FPI	AREA	FIN HEIGHT	FIN LENGTH	ROWS	FPI	AREA
100" WIDE	A	1	52.5	48	1	10	28.4	52.5	48	1	10	35.0
	B	1	52.5	48	2	10	28.4	52.5	48	2	10	35.0
	C	1	75	84	1	10	28.4	75	84	1	10	87.5
	D	1	75	84	2	10	28.4	75	84	2	10	87.5
142" WIDE	A	2	65	48	1	10	0.0	66	48	1	10	0.0
	B	2	65	48	2	10	0.0	66	48	2	10	0.0
	C	2	75	60	1	10	0.0	75	60	1	10	0.0
	D	2	75	60	2	10	0.0	75	60	2	10	0.0

Table 6c contains physical data for hot water and steam coils located in the outside air intake. If this coil is used in conjunction with a heat wheel it is located up stream of the heat wheel

## RL Specifications

Table 7. RL ELECTRIC HEAT DATA

CABINET WIDTH	CABINET	UNIT	CFM TYPE	EVAP FACE AREA	CFM	TEMPERATURE RISE (°F)											
						QUANTITY OF ELEMENTS											
						1	2	3	4	5	6	7	8	9	10	11	12
100" WIDE	A	45	HIGH	37.5	22,500	6	11	17	22	28	34	Not Available					
			LOW	29.7	8,906	14	28	42	57	71	85						
		60	HIGH	50.0	30,000	4	8	13	17	21	25						
			LOW	29.7	8,906	14	28	42	57	71	85						
		70	HIGH	50.0	30,000	4	8	13	17	21	25						
			LOW	29.7	8,906	14	28	42	57	71	85						
	B	75	HIGH	53.1	31,875	4	8	12	16	20	24						
			LOW	35.0	10,500	12	24	36	48	60	72						
		95	HIGH	53.1	31,860	4	8	12	16	20	24						
			LOW	43.8	13,125	10	19	29	38	48	58						
	C	100	HIGH	65.6	39,375	3	6	10	13	16	19						
			LOW	51.6	15,469	8	16	24	33	41	49						
		110	HIGH	65.6	39,375	3	6	10	13	16	19						
			LOW	51.6	15,469	8	16	24	33	41	49						
		125	HIGH	71.9	43,125	3	6	9	12	15	18						
			LOW	59.4	17,813	7	14	21	28	35	42						
		135	HIGH	68.0	40,800	3	6	9	12	15	19						
			LOW	63.3	18,984	7	13	20	27	33	40						
142" WIDE	D	134	HIGH	79.2	47,526	3	5	8	11	13	16	19	21	24	26	29	32
			LOW	58.6	17,578	7	14	21	29	36	43	50	57	64	72	79	86
		155	HIGH	86.8	52,080	2	5	7	10	12	15	17	19	22	24	27	29
			LOW	65.1	19,531	6	13	19	26	32	39	45	52	58	64	71	77
		170	HIGH	94.4	56,640	2	4	7	9	11	13	16	18	20	22	24	27
			LOW	71.6	21,484	6	12	18	23	29	35	41	47	53	59	64	70
	E	190	HIGH	110.7	66,420	2	4	6	8	9	11	13	15	17	19	21	23
			LOW	82.5	24,740	5	10	15	20	25	31	36	41	46	51	56	61
		210	HIGH	118.3	70,980	2	4	5	7	9	11	12	14	16	18	20	21
			LOW	89.0	26,693	5	9	14	19	24	28	33	38	42	47	52	57
		230	HIGH	125.9	75,540	2	3	5	7	8	10	12	13	15	17	18	20
			LOW	95.5	28,646	4	9	13	18	22	26	31	35	40	44	48	53

Table 7 shows the temperature rise through each quantity of 40 kW heaters based on the air flows indicated.

Up to six 40 kW heaters are available in the A, B, and C cabinets and up to twelve 40 kW heaters are available in the D and E cabinets

Table 8. RL ELECTRIC HEAT DESIGNATIONS

CABINET WIDTH	CABINET	UNIT	QUANTITY OF ELEMENTS							
			HEAT DESIGNATION							
			1	2	3	4	5	6	7	8
100" WIDE	A	45	1	2	3	4	5	6	N/A	N/A
		60								
		70								
	B	75								
		95								
	C	100								
		110								
		125								
142" WIDE	D	134								
		155								
		170								
	E	190								
		210								
		230								

Table 8 contains the number of electric heaters available for each cabinet size. Each heater is 40 kW with two stages of 20 kW available.

## RL Specifications

Table 9. RL GAS HEAT TEMPERATURE RISE

CABINET WIDTH	CABINET	UNIT	CFM TYPE	EVAP FACE AREA	CFM	TEMP RISE											
						QUANTITY OF HEAT EXCHANGERS											
						1	2	3	4	5	6	7	8	9	10	11	12
100" WIDE	A	45	HIGH	37.5	22,500	7	14	22	29	36	43	51	58	65	72	79	87
			LOW	29.7	8,906	18	36	55	73	91							
		60	HIGH	50.0	30,000	5	11	18	22	27	32	38	43	49	54	60	65
			LOW	29.7	8,906	18	36	55	73	91							
		70	HIGH	50.0	30,000	5	11	16	22	27	32	38	43	49	54	60	65
			LOW	29.7	8,906	18	36	55	73	91							
	B	75	HIGH	53.1	31,875	5	10	15	20	25	31	36	41	46	51	56	61
			LOW	35.0	10,500	15	31	46	62	77	93						
		95	HIGH	53.1	31,860	5	10	15	20	26	31	38	41	46	51	56	61
			LOW	43.8	13,125	12	25	37	50	62	74	87					
	C	100	HIGH	65.6	39,375	4	8	12	17	21	25	29	33	37	41	45	50
			LOW	51.6	15,469	11	21	32	42	53	63	74	84	95			
		110	HIGH	65.6	39,375	4	8	12	17	21	25	29	33	37	41	45	50
			LOW	51.6	15,469	11	21	32	42	53	63	74	84	95			
		125	HIGH	71.9	43,125	4	8	11	15	19	23	26	30	34	38	41	45
			LOW	59.4	17,813	9	18	27	36	46	55	64	73	82	91		
		135	HIGH	68.0	40,800	4	8	12	16	20	24	28	32	36	40	44	48
			LOW	63.3	18,984	9	17	26	34	43	51	60	68	77	86	94	
	D	134	HIGH	79.2	47,526	4	8	12	16	20	24	28	32	36	40	44	48
			LOW	58.6	17,578	11	22	33	43	54	65	76	87				
		155	HIGH	86.8	52,080	4	7	11	15	18	22	26	29	33	37	40	44
			LOW	65.1	19,531	10	20	29	39	49	59	68	78	88			
		170	HIGH	94.4	56,640	3	7	10	13	17	20	24	27	30	34	37	40
			LOW	71.6	21,484	9	18	27	35	44	53	62	71	80	89		
142" WIDE	E	190	HIGH	110.7	66,420	3	6	9	11	14	17	20	23	26	29	32	34
			LOW	82.5	24,740	8	15	23	31	38	46	54	62	69	77	85	
		210	HIGH	118.3	70,980	3	5	8	11	13	16	19	21	24	27	30	32
			LOW	89.0	26,693	7	14	21	29	36	43	50	57	64	71	78	86
		230	HIGH	125.9	75,540	3	5	8	10	13	15	18	20	23	25	28	30
			LOW	95.5	28,646	7	13	20	27	33	40	47	53	60	66	73	80

Table 9 Contains temperature rise across gas heaters based on air flow and the number of heaters.  
The maximum temperature rise is limited to 100 F

Table 10. RL GAS HEAT DESIGNATIONS

CABINET WIDTH	CABINET	UNIT	QUANTITY OF HEAT EXCHANGERS					
			HEAT DESIGNATION					
			1	2	3	4	5	6
100" WIDE	A	45						
		60						
		70						
	B	75						
		95	2	4	6	8	10	12
	C	100						
		110						
		125						
		135						
		134						
142" WIDE	D	155						
		170						
		190	2	4	6	8	10	12
	E	210						
		230						

Table 10 shows the heating designation (heat 1, heat 2, etc) and the number of gas heaters for associated with each designation.

Notes: 1 to 6 heat exchangers may be 1 or 2 racks wide depending on minimum air flow, 8 or more heat exchangers are 2 racks wide.



## RL Specifications

Table 11. RL ECONOMIZER DAMPER SIZING

CABINET WIDTH	CABINET	UNIT	BLADE LENGTH	# OF BANKS	RETURN AREA	OUTSIDE AREA
100" WIDE	A	45	47.5	1	17.8	11.9
		60				
		70				
	B	75	47.5	1	17.8	11.9
		95				
		100				
	C	110	38	2	28.5	19.0
		125				
		135				
142" WIDE	D	134	47.5	2	35.6	23.8
		155				
		170				
	E	190	60	2	45.0	30.0
		210				
		230				

Table 11 contains physical data for return air and outside air data.

Table 12. RL HEATWHEEL DATA

CABINET WIDTH	CABINET	UNIT	QUANTITY OF ENERGY RECOVERY WHEELS			
			SMALL	MEDIUM	LARGE	X-LARGE
100" WIDE	A	45	(1) 74" 12,000 CFM MAX	(1) 81" 15,000 CFM MAX	(2) 74" 24,000 CFM MAX	Not Available
		60				
		70				
	B	75				
		95				
		100				
	C	110				
		125				
		135				
142" WIDE	D	134	(1) 74" 12,000 CFM MAX	(1) 81" 15,000 CFM MAX	(2) 74" 24,000 CFM MAX	(2) 81" 30,000 CFM MAX
		155				
		170				
	E	190				
		210				
		230				

Table 12 shows the quantity of heat wheels available in each RL unit.

## RL Specifications

Table 13a. RL BAROMETRIC RELIEF OPENINGS A-C CABINETS

RETURN STYLE	RETURN DIRECTION	DAMPER SIZE			
		DAMPER QTY.	DAMPER HEIGHT	DAMPER WIDTH	DAMPER AREA
ECON	BOTTOM	1	52	26	9.4
	SIDE HIGH CFM	2	52	18	13.0
	SIDE LOW CFM	1	52	26	9.4
POWER RETURN	BOTTOM	2	52	18	13.0
	SIDE HIGH CFM	2	52	18	13.0
	SIDE LOW CFM	2	52	18	13.0
POWER EXHAUST	BOTTOM	2	52	26	18.8
	SIDE HIGH CFM	2	52	26	18.8
	SIDE LOW CFM	2	52	26	18.8
SMALL/MEDIUM ERC	BOTTOM	2	52	26	18.8
	SIDE HIGH CFM	2	52	26	18.8
	SIDE LOW CFM	2	52	26	18.8
LARGE ERC 36" PROP	BOTTOM	1 OR 2	40	40	11 OR 22
	SIDE HIGH CFM	1 OR 2	40	40	11 OR 22
	SIDE LOW CFM	1 OR 2	40	40	11 OR 22
LARGE ERC 42" PROP	BOTTOM	1 OR 2	48	48	16 OR 32
	SIDE HIGH CFM	1 OR 2	48	48	16 OR 32
	SIDE LOW CFM	1 OR 2	48	48	16 OR 32

NOTE 1: 48" PROP NOT AVAILABLE ON RL A-C LARGE HEAT WHEEL

NOTE 2: NUMBER OF DAMPERS = NUMBER OF PROPS ON LARGE ERC A-C

Table 13b. RL BAROMETRIC RELIEF OPENINGS D-E CABINETS

RETURN STYLE	RETURN DIRECTION	DAMPER SIZE			
		DAMPER QTY.	DAMPER HEIGHT	DAMPER WIDTH	DAMPER AREA
ECON	BOTTOM	3	52	22	23.8
	SIDE HIGH CFM	3	52	22	23.8
	SIDE LOW CFM	2	52	22	15.9
POWER RETURN	BOTTOM	3	52	22	23.8
	SIDE HIGH CFM	3	52	22	23.8
	SIDE LOW CFM	3	52	22	23.8
POWER EXHAUST	BOTTOM	2	52	30	21.7
	SIDE HIGH CFM	2	52	30	21.7
	SIDE LOW CFM	2	52	30	21.7
HEAT WHEEL	BOTTOM	2	52	30	21.7
	SIDE HIGH CFM	2	52	30	21.7
	SIDE LOW CFM	2	52	30	21.7

NOTE 3: ALL DAMPERS ARE SPLIT INTO TWO BLADES

## RL Specifications

Table 14. RL FILTER DATA

CABINET WIDTH	CABINET	UNIT	2" 30% 16"X25"	4" 30% 16"X25"	BOX A CARTRIDGE FILTERS 65%- 85%-95%	BOX B 24X24X12 CARTRIDGE FILTERS 65%- 85%-95%	BOX C 24X24X12 CARTRIDGE FILTERS 65%- 85%-95%	BOX A BAG FILTERS 85%-95%	BOX B 24X24X30 BAG FILTERS 85%-95%	BOX C 24X24X30 BAG FILTERS 85%-95%
100" WIDE	A	45	18	18	(12) 24x24x12 (4) 24x20x12	20	N/A	(12) 24x24x30 (4) 24x20x30	16	N/A
		60								
		70								
	B	75	24	24						
		95								
		100								
	C	110	36	36						
		110								
		125								
		135								
142" WIDE	D	134	48	48	(15) 24x24x12 (5) 24x20x12	25	30	(15) 24x24x30 (5) 24x20x30	20	25
		155								
		170								
		190								
	E	210	60	60						
		230								

# How To Create An RL Unit Selection

1. ADD a new order (Click on upper portion of window, Click Add Order)

The screenshot shows the 'AAON Rating Program' window. The 'Orders' table is visible with columns: No., Job Name, Job Number, Description, Customer Name, AAON Contact, and Site Altitude. Below the table is the 'Order Summary for Job Number:' section with columns: No., Qty, Product Description, and Tag. The 'Add New Order' button is highlighted in the left sidebar. The status bar at the bottom shows '10:03 AM' and '8/23/2002'.

Enter Order Information:

The screenshot shows the 'Order Information' dialog box. It has two tabs: 'General Information' and 'Notes'. The 'General Information' tab is active, showing fields for 'Job No.' (with a dropdown menu), 'Job Name' (with a text input field), and 'Site Altitude' (with a numeric input field). The 'OK' and 'Cancel' buttons are on the right side of the dialog.

Enter Order information: Job No., Job Name, Site Altitude

## How To Create An RL Unit Selection

Enter Notes:

The screenshot shows a window titled "Order Information". It contains two tabs: "General Information" and "Notes". The "Notes" tab is selected. Inside the "Notes" tab, there are two text input fields: "Job Description" and "Customer Notes". To the right of these fields are two buttons: "OK" and "Cancel".


Any special information

2. Add a new unit to the order (Click on lower portion of window, Click Add New Unit)


The screenshot shows the "AAON Roll out Program" interface. On the left, there is a sidebar with buttons: "Add New Unit" (circled), "Exit", "Copy", and "Delete". The main window displays an "Orders" table with the following columns: "No.", "Job Name", "Job Number", "Description", "Customer Name", "AAON Contact", and "Site Altitude". The table contains one row with the following data: "1", "New Job", "Job #1", "", "", "", and "0". Below the table, there is an "Order Summary for Job Number: Job #1" section with the following columns: "No.", "Qty", "Product Description", and "Tag". The summary table is currently empty.


# How To Create An RL Unit Selection

**Add New Unit**



Rating | Selection

  
 RL Unit

  
 CL Unit

Select RL Unit to add a rooftop packaged unit, or select CL Unit to add a condensing unit.

RL Model & Feature Master

RL - 045 - 3 - 0 - 0 A 0 2 - 000 : 0000 - 000 - 000 - 000 - 00000000 - 00 - 0000000000 B

Total CFM:	18750	OA CFM:	5625	RA CFM:	18750	ESP:	0.75	Model	OK
MA DB:	80.0	OA DB:	95.0	RA DB:	75.0	Return SP:	0.75	Features	Cancel
MA WB:	67.0	OA WB:	75.0	RA WB:	82.0	Dir SP:	0.35	Conditions	Help

Tags (RTUs): RTU#1 Qty: 1

Model Options		Unit Size	
	Unit Size	Code	Description
A	Voltage	045	Forty Five
	Inter. Protection	060	Sixty
	Cooling - Style	070	Seventy
	Cooling - Configuration	075	Seventy Five
	Cooling - Coating	095	Ninety Five
B	Cooling - Staging	100	One Hundred
	Heating - Type	110	One Hundred and Ten
	Heating - Designation	125	One Hundred and Twenty Five
	Heating - Staging	134	One Hundred and Thirty Four
		135	One Hundred and Thirty Five
		155	One Hundred and Fifty Five
		170	One Hundred and Seventy
	190	One Hundred and Ninety	
	210	Two Hundred and Ten	

045 = Forty Five

## How To Create An RL Unit Selection

This unit designation shown along the top of the screen is divided into two portions, Model Options and Feature Options. To begin, under Model Options click the unit size then proceed through each option below. Select Model Option by clicking in the left column, and select the feature code by clicking in right column.

Select Unit Size

Select Voltage

RL Model & Feature Master

RL - 045 - 3 - 0 - 0 A 02 - 000 : 0000 - 000 - 000 - 000 - 00000000 - 00 - 000000000B

Total CFM:	18750	OA CFM:	5625	RA CFM:	18750	ESP:	0.75	Model	OK
MA DB:	80.0	OA DB:	95.0	RA DB:	75.0	Return SP:	0.75	Features	Cancel
MA WB:	67.0	OA WB:	75.0	RA WB:	62.0	Dirt SP:	0.35	Conditions	Help

Tags (RTUs): RTU# 1 Qty: 1

Model Options		Voltage	
		Code	Description
Unit Size		2	230V/3Ø/60Hz
Voltage		3	460V/3Ø/60Hz
Inter. Protection		4	575V/3Ø/60Hz
A Cooling - Style		8	208V/3Ø/60Hz
Cooling - Configuration			
Cooling - Coating			
Cooling - Staging			
B Heating - Type			
Heating - Designation			
Heating - Staging			

D45 = Forty Five

Select Interior Protection:

RL Model & Feature Master

RL - 045 - 3 - 0 - 0 A 02 - 000 : 0000 - 000 - 000 - 000 - 00000000 - 00 - 000000000B

Total CFM:	18750	OA CFM:	5625	RA CFM:	18750	ESP:	0.75	Model	OK
MA DB:	80.0	OA DB:	95.0	RA DB:	75.0	Return SP:	0.75	Features	Cancel
MA WB:	67.0	OA WB:	75.0	RA WB:	62.0	Dirt SP:	0.35	Conditions	Help

Tags (RTUs): RTU# 1 Qty: 1

Model Options		Inter. Protection	
		Code	Description
Unit Size		0	Standard
Voltage		A	Interior corrosion protection
Inter. Protection			
A Cooling - Style			
Cooling - Configuration			
Cooling - Coating			
Cooling - Staging			
B Heating - Type			
Heating - Designation			
Heating - Staging			

D45 = Forty Five



# How To Create An RL Unit Selection

Select Cooling Style:

RL - 045 - 3 - 0 - 0 A 0 2 - 0 0 0 : 0 0 0 0 - 0 0 0 - 0 0 0 - 0 0 0 0 0 0 0 - 0 0 - 0 0 0 0 0 0 0 0 B									
Total CFM:	18750	OA CFM:	5625	RA CFM:	18750	ESP:	0.75	Model	OK
MA DB:	80.0	OA DB:	95.0	RA DB:	75.0	Return SP:	0.75	Features	Cancel
MA WB:	67.0	OA WB:	75.0	RA WB:	62.0	Dist SP:	0.35	Conditions	Help
Tags (RTUs):		RTU#1		Qty:		1			

Model Options	Cooling - Style
Unit Size	Code Description
Voltage	0 Blow Thru - R22 Dual Circuited Compressors
Inter. Protection	A Draw Thru - R22 Dual Circuited Compressors
A Cooling - Style	F Blow Thru - Air Handling Unit w/ Vestibule
Cooling - Configuration	G Draw Thru - Air Handling Unit w/ Vestibule
Cooling - Coating	H Blow Thru - Air Handling Unit w/o Vestibule w/ Front Control Panel
Cooling - Staging	J Draw Thru - Air Handling Unit w/o Vestibule w/ Front Control Panel
B Heating - Type	K Blow Thru - Air Handling Unit w/o Vestibule w/ Back Control Panel
Heating - Designation	L Draw Thru - Air Handling Unit w/o Vestibule w/ Back Control Panel
Heating - Staging	M Blow Thru - Air Handling Unit w/o Vestibule w/ End Control Panel
	N Draw Thru - Air Handling Unit w/o Vestibule w/ End Control Panel
	P Blow Thru - R22 Independently Circuited Compressors
	Q Draw Thru - R22 Independently Circuited Compressors

D45 = Forty Five

The cooling style defines fan position (draw thru/blow thru) and whether the unit is DX or non-compressorized, additionally for DX if the unit has 4 compressors each compressor can be individually circuited or 2 sets of dual circuited compressors can be used providing 2 independent refrigerant circuits. Rooftop air handling units may also be selected.

Select Cooling Configuration:

RL - 045 - 3 - 0 - 0 A 0 2 - 0 0 0 : 0 0 0 0 - 0 0 0 - 0 0 0 - 0 0 0 0 0 0 0 - 0 0 - 0 0 0 0 0 0 0 0 B									
Total CFM:	18750	OA CFM:	5625	RA CFM:	18750	ESP:	0.75	Model	OK
MA DB:	80.0	OA DB:	95.0	RA DB:	75.0	Return SP:	0.75	Features	Cancel
MA WB:	67.0	OA WB:	75.0	RA WB:	62.0	Dist SP:	0.35	Conditions	Help
Tags (RTUs):		RTU#1		Qty:		1			

Model Options	Cooling - Configuration
Unit Size	Code Description
Voltage	A Air Cooled Cond w/ 4R Coil High CFM - Coil Face Area = 37.50 ft²
Inter. Protection	B Air Cooled Cond w/ 6R Coil High CFM - Coil Face Area = 37.50 ft²
A Cooling - Style	C Air Cooled Cond w/ 4R Coil Low CFM - Coil Face Area = 29.69 ft²
Cooling - Configuration	D Air Cooled Cond w/ 6R Coil Low CFM - Coil Face Area = 29.69 ft²
Cooling - Coating	E Evap Cond w/ 4R Coil High CFM - Coil Face Area = 37.50 ft²
Cooling - Staging	F Evap Cond w/ 6R Coil High CFM - Coil Face Area = 37.50 ft²
B Heating - Type	G Evap Cond w/ 4R Coil Low CFM - Coil Face Area = 29.69 ft²
Heating - Designation	H Evap Cond w/ 6R Coil Low CFM - Coil Face Area = 29.69 ft²
Heating - Staging	J Water Cool Cond w/ 4R Coil High CFM - Coil Face Area = 37.50 ft²
	K Water Cool Cond w/ 6R Coil High CFM - Coil Face Area = 37.50 ft²
	L Water Cool Cond w/ 4R Coil Low CFM - Coil Face Area = 29.69 ft²
	M Water Cool Cond w/ 6R Coil Low CFM - Coil Face Area = 29.69 ft²

D45 = Forty Five

## How To Create An RL Unit Selection

If the unit is DX then you can select air, evaporative or water cooled condensers. In each category you can select different cooling coil face area by choosing high or low cfm and either 4R/12fpi or 6R/12fpi. If the unit is Chilled Water you can select coil rows, fins, and circuiting under the conditions screen. In each category there are high and low cfm choices to change the cooling coil surface area. If the unit is DX you can select a different cooling coil face area by choosing high or low cfm and either 4R/12fpi or 6R/12fpi. If chilled water coils are selected for an Air handler the following screen will appear instead:

RL - 045 - 3 - 0 - J 000 - 000 : 0000 - 0D0 - 000 - 000 0000 - 00 - 000000000B									
Total CFM:	18750	OA CFM:	5625	RA CFM:	18750	ESP:	0.75	Model	OK
MADE:	88.0	OA DB:	95.0	RA DB:	75.0	Return SP:	0.75	Features	Cancel
MAWB:	67.0	OA WB:	75.0	RA WB:	62.0	Out SP:	0.35	Conditions	Help
Tag (RTU):	RTU#1			Qty:	1				

Model Options		Cooling - Configuration	
Unit Size		Code	Description
Voltage		0	No Cooling
Inter. Protection		U	Chilled Water 4R Coil High CFM - Coil Face Area = 37.54 ft <sup>2</sup>
A Cooling - Style		V	Chilled Water 4R Coil Low CFM - Coil Face Area = 30.03 ft <sup>2</sup>
Cooling - Configuration		W	Chilled Water 6R Coil High CFM - Coil Face Area = 37.54 ft <sup>2</sup>
Cooling - Coating		Y	Chilled Water 6R Coil Low CFM - Coil Face Area = 30.03 ft <sup>2</sup>
Cooling - Staging		Z	Chilled Water 8R Coil High CFM - Coil Face Area = 37.54 ft <sup>2</sup>
B Heating - Type		1	Chilled Water 8R Coil Low CFM - Coil Face Area = 30.03 ft <sup>2</sup>
Heating - Designation		2	DX Coil 4R High CFM - Coil Face Area = 37.50 ft <sup>2</sup>
Heating - Staging		3	DX Coil 4R Low CFM - Coil Face Area = 29.69 ft <sup>2</sup>
		4	DX Coil 6R High CFM - Coil Face Area = 37.50 ft <sup>2</sup>
		5	DX Coil 6R Low CFM - Coil Face Area = 29.69 ft <sup>2</sup>

Click on the Code for the coil face area. Select coil rows, and fpi on the conditions screen.